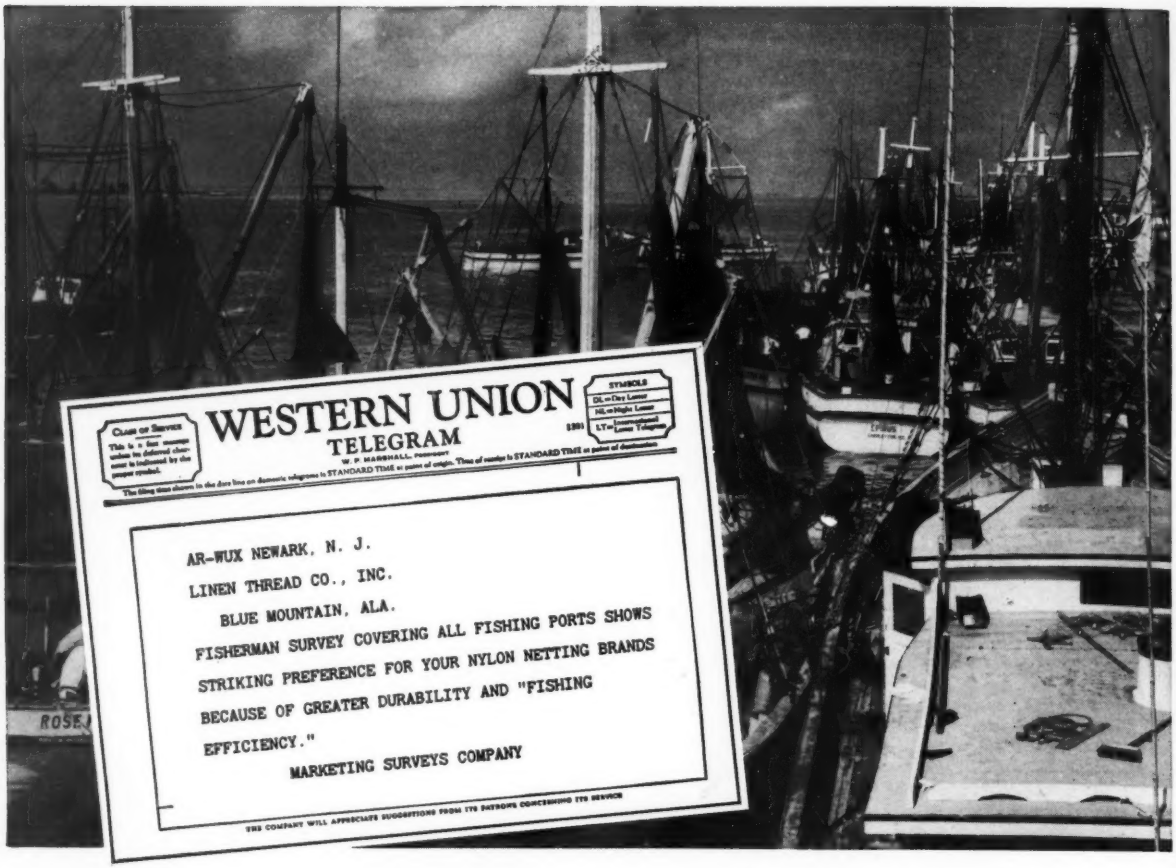
NATIONAL FISHERMAN

JANUARY 1960



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Specify Netting From America's First Authority

The Lookout

Fish for Schools

The U. S. Bureau of Commercial Fisheries has long recognized that school lunch rooms represent one of the large potential outlets for fishery products. Educational activities by the Bureau and follow-up by the industry have contributed to the increasing use of fishery products in school lunch programs.

Deliveries of all foods for 500 public schools were recently recorded over a 12-month period at 2-month intervals. During the survey period, almost 28 million pounds of fish and shellfish were purchased by public schools having a food service. Based on an average daily attendance figure of a little over 21 million pupils, about 1.3 pounds of fish and shellfish per child were available.

Of the total quantity used, almost 15 million pounds were in fresh or frozen form. Volume-wise, fish sticks were the most important item in that category, accounting for almost 6 million pounds. Fish fillets accounted for slightly over 4 million pounds and fresh whole fish about 1.5 million pounds. On a per capita basis, 0.7 pound of fresh and frozen fish and fish products combined were available for schools serving food.

Slightly over 13 million pounds of canned fish were used during the survey period, with tuna the most important canned fish item, accounting for almost 8 million pounds. Salmon represented over 4 million pounds, while bonito, sardines and other canned fish items accounted for the balance in this category.

About 200,000 pounds of shellfish items were delivered to these schools during the survey period.

The wholesale value of all fish and shellfish purchased by public schools with food services during the survey period amounted to almost $13 million, or 60 cents per child. Canned fish items accounted for about $7 million, or 32 cents per child, as tuna came to almost $4 million, and salmon to over $2 million.

In the fresh and frozen category, the wholesale value of all items amounted to $6 million, with fish sticks and fish fillets accounting for over $4 million of the total. Fresh whole fish was relatively the least expensive item in this category. Results of the survey revealed that fish and fish products accounted for 2 cents out of each school food dollar.

The survey covered two school categories—those public schools participating in the National School Lunch Program and other public schools providing food service but not in the Program. National School Lunch Program schools received 94 percent of the total value of foods delivered during the survey.

NATIONAL FISHERMAN

The Fishing Industry Magazine

Vol. 40 No. 12 January 1960

CONTENTS

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Publication Office: National Fisherman, Goffstown, N. H.—Hyacinth 7-4821

Formerly Atlantic Fisherman, Established 1919. Published monthly by Atlantic Fisherman, Inc.

Member: National Business Publications and Business Publications Audit of Circulation

Pacific Representative: Murray Bothwell, 234 E. Colorado St., Pasadena 1, Cal.—Ryan 1-9155

Accepted as Controlled Circulation Publication at Manchester, N. H.

Yearly subscription rates: United States, $4; Foreign, $6. Single copies, 50¢

FISHERY PROGRESS

► Trade Agreements Act Upheld

The U. S. Court of Customs and Patent Appeals has affirmed a dismissal of a case brought by Star-Kist Foods of Terminal Island, Calif., and in so doing upheld the constitutionality of the Trade Agreements Act of 1934 under which reciprocal tariff-cutting agreements have been entered by the U. S. with other countries. The unanimous decision of the five-man Court affirmed a decision rendered in December of 1958 by the U. S. Customs Court.

Star-Kist had questioned a tariff reduction on canned tuna in brine from 25 per cent, as set out in the Tariff Act of 1930, to 12-½ per cent. The reduction was negotiated with Iceland, under the reciprocal trade agreements program, on a basket category of fishery products.

It was into this category that tuna in brine was placed by the Bureau of Customs when tuna in brine imports first commenced to enter the country. Star-Kist urged that the Trade Agreements Act was an unconstitutional delegation of legislative powers by the Congress to the President, and that the tariff-cutting agreement was a treaty with a foreign nation requiring Senate ratification.

► Further Fish Block Ruling

The Bureau of Customs has issued another ruling on fish blocks, clarifying the "in bulk" tariff provisions which provides for a duty of one cent a pound on fish blocks packed in bulk or in containers weighing, with contents, more than 15 pounds. When not in bulk, or when in containers weighing, with contents, less than 15 pounds, the blocks are dutiable at 12-½ per cent ad valorem.

The new ruling held a particular shipment not to be in bulk; hence, dutiable at 12-½ per cent ad valorem. The blocks in question each weighed 13-½ or 13-¾ pounds. Each block was enclosed in a carton with a top. Four of five such blocks were then strapped together, so that the overall strapped package weighed in excess of 15 pounds. Each block's individual carton was labeled to indicate whether the block was cod, or haddock, etc.

The Bureau of Customs held that each individual block, under these circumstances, constituted the block, and its immediate container; that the strapping together of a number of such blocks did not constitute bulk packaging, noting that "Lexicographers" define the term "in bulk" as meaning in a mass; not enclosed in separate packages or divided into parts; in such a state that any desired quantities may be removed.

► 350 Fishery Loans Made

The amount of money made available under the fishery loan program established in the Department of the Interior, has amounted to $8,322,000 for 350 loans.

The loans are made from a revolving fund of $13 million. The initial legislation, passed in 1956, authorized a revolving fund of $10 million and an appropriation for that amount was made. In 1958 the authorization was raised to $20,000,000 and the appropriation increased to $13 million.

The fisheries loan program is administered by the Bureau of Commercial Fisheries, Fish and Wildlife Service. The purpose of the program is to aid the domestic fishing industry by making funds available to finance or re-finance vessel and gear operation, maintenance and replacement.

More than $1,150,000 has been repaid on the principal of the loans, plus additional amounts in interest. Interest is five percent.

► Pollock Fillets Storage Tests

Frozen pollock fillets maintain quality longer at the lower storage temperatures according to tests now being carried on by the Bureau of Commercial Fisheries' new Technological Laboratory in Gloucester. By testing one pound packages of pollock fillets at 10°, 0° and —20° Fahrenheit, Bureau scientists found that the fillets became definitely inedible in less than two months of storage life at the +10° temperature; held storage life of about six months at zero; and suffered no measurable change in quality when stored for more than six months at —20°.

These tests very significantly re-emphasize the importance of storing fish at zero or lower in order to insure the marketing of a high quality product. Also important is the finding that increasing the storage period makes necessary a further lowering of the storage temperatures.

► Expanded King Crab Research

Expansion of research on king crab in the Bering Sea was agreed upon in November by Japan and the United States. The decision was made at a committee meeting of the International North Pacific Fisheries Commission which met in Vancouver, British Columbia.

The expanded research program will focus on crab-trawling in the Eastern Bering Sea. It is expected that the studies will lead to unilateral agreements between Japan and the U. S. for regulation and conservation of the valuable king crab resource.

► 1960 Industry Lenten Promotion

The fishing industry is laying plans for the first annual industry-wide lenten promotion, which peaks March 2 to April 17. The theme will be "It's Fish 'n' Seafood Time."

Menu variety will be emphasized in advertising, publicity, and merchandising materials. The Bureau of Commercial Fisheries will actively participate in the promotion through its consumer education program.

Bureau materials will stress menu variety, ease of preparation, nutritional value, and health benefits.

► World Fishery Catch Up

The annual Yearbook of Fishery Statistics, published by the Food and Agriculture Organization of the United Nations notes that the world's total commercial fish catch in 1958 increased by 3 million metric tons over the previous year. The total 1958 catch was 33.7 million tons, live weight.

Japan continued as No. 1 fish producers, with a catch of 5.5 million tons. The United States, Mainland China and Russia each caught between 2 and 3 million tons. Canada, Norway, India, and the United Kingdom each produced about one million tons.

Asia contributed 50 per cent of the total world catch. Japan supplied 17.2 per cent of the Asian total. European fishermen, excluding Russia, supplied more than 22 per cent. North American fishermen provided about 10 per cent. Russia reported a catch amounting to more than 8 per cent of the world total. About 5 per cent of the total world catch was supplied by Africa.

► December Fish Holdings

Cold-storage holdings of fishery products continue high, and on December 1, they were at the highest level for the year. Traditionally, fish sales are at the seasonal peak during Lent, and the present inventories will adequately accommodate the increased consumption of fish during this season which begins on March 2.

Holdings of edible fishery products at the beginning of December totaled 234.5 million pounds, an increase of approximately 4 million pounds over November 1 holdings and about 25.7 million pounds more than holdings on December 1, 1959.

Shrimp holdings in December were quite heavy with a total of almost 48 million pounds in cold storage. This is about 8 million pounds more than the holdings in December 1958, and almost 5 million pounds heavier than November 1958.

Among the other fishery products in greater supply than last year are blocks, fillets of cod and haddock, fish sticks and portions, halibut, and scallops. There were lower holdings of crabs, fresh-water fish, oysters, spiny lobsters, salmon and whiting.

"TERRA NOVA" Fishes 18 Months without replacing any Wire Rope

Another example of
OUTSTANDING PERFORMANCE

with **"DGK" TRAWL CABLE**

The 110 ft. steel trawler "Terra Nova", Capt. Tom Kelly, has plenty of power, tows heavy doors and nets, and fishes on the hardest kind of bottom. Yet her "DGK" wire rope gave 18 months' service before any replacement was necessary. Even then she needed only a 200-fathom length on each of her 600-fathom winch drums. That's just 1/3 replacement after a year and one-half of gruelling use!

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New Shrimp Grounds Off South America

"Oregon" exploration on northeast coast indicates potential resource that could extend range of the Gulf of Mexico Fleet

Recent exploratory cruises by the U. S. Bureau of Commercial Fisheries vessel *Oregon* showed definite commercial quantities of shrimp off the northeast coast of South America, which could be of value in alleviating the over fished conditions found in present areas of the Southeast and Gulf Coasts of the United States.

The steadily increasing long range operating capability, over-all efficiency, and the increased number of vessels in the shrimp fleet of the Gulf and South Atlantic states during recent years prompted the South American explorations. Up to the present, with few exceptions, this dual increase in fishing power has been absorbed by the present established fishery on previously delimited fishing grounds. One way of alleviating the excess fishing pressure seemed to lie in the discovery of new shrimp grounds.

Most trawlable areas of the continental shelf along the Gulf and southern United States coasts, in waters less than 25 fathoms, had already been explored and there seemed little indication that extensive new areas would be added following the discovery of the Tortugas and Campeche pink-shrimp beds. The lessening importance of limitation by time and distance, brought about by increased range and working ability of modern vessels, made exploratory fishing outside the existing commercial range practicable.

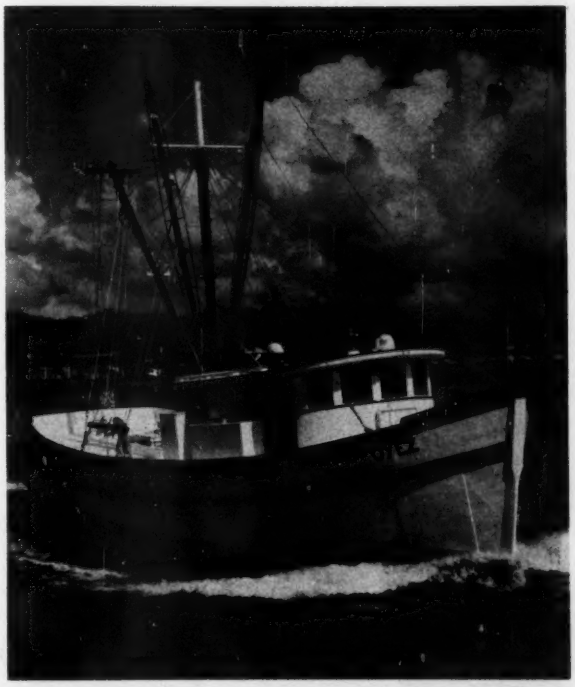
On South America's northeast coast, commercial quantities of pink shrimp were found off the Guianas with optimum catches near the 30-fathom curve. The best night's fishing resulted in 576 pounds (heads-on) 6-10 count pink shrimp, off the Surinam River, obtained by dragging two 40-foot flat trawls simultaneously. Brown shrimp were less common and scattered. Best catches amounted to 30 to 40 pounds (heads-on) per one-hour drag. Sea bobs were prevalent in waters shallower than 16 fathoms. Only small amounts of deep-water shrimp species were taken, although three species, including royal-red shrimp and "scarlet" shrimp, were found to inhabit the entire deep-water region.

Geographically, the waters over the continental shelf of the northeast coast of South America, roughly from Trinidad to the Amazon River, constitute a vast region which has received, at best, only meager shrimp investigation. Accounts of the limited surveys that had been made in restricted areas off the Amazon River and the Guianas varied, and, in most cases, could not be traced. The first *Oregon* cruise covered the region from Trinidad to the Amazon Delta with 113 exploratory drags. A total of 71 drags was made in the 10- to 100-fathom-depth range and 42 drags were made in 100- to 400-fathom depths.

The work carried out on the second cruise was more restricted in depth and area. and it extended from Trinidad to the coastal waters of Cayenne, French Guiana, with major emphasis on explorations off the coast of the Guianas. Ninety percent of the 182 drags were made in water of less than 50 fathoms.

Gear and Fishing Methods

Most of the trawling was carried out with 40-foot-flat shrimp trawls, using either bracket or chain doors on 15- to 25-fathom bridles. Tickler chains were used during most of the work on the second trip with encouraging results. A single trawl was used for most exploratory dragging, but double-trawl rigs also were operated in a few areas to more closely tie in the results with accepted Gulf of Mexico commercial trawling practices. Larger trawls, varying from 65 to 100 feet in head-rope size, were also tried; but did not compare favorably with two 40-foot nets towed simultaneously on the same grounds, and were therefore discontinued.



"Oyez", owned by Ocean Products, Tampa, Florida, was built by Diesel Engine Sales, Inc., St. Augustine, Florida. The 67', double rig, shrimper is powered with a 210 hp. General Motors Diesel turning a 50 x 44 Federal propeller. Equipment includes 1500-watt Delco-Remy generator, 1500-watt Petter diesel light plant, and Yocam batteries.

During exploratory trawling it was noted that length of drag resulted in a noticeable change in catch rate. Although the varying trawling conditions did not allow proper statistical evaluation of the catches, the rates from one-, two-, and three-hour drags, in most cases, showed a marked shrimp-catch increase per hour between the one- and three-hour drags. This, presumably, might result from the length of time it took the net to reach a "stabilized" fishing position.

The amount of warp used in relation to water depth was not constant, as strong and variable currents necessitated constant drag-to-drag modifications of this factor.

Fishing Conditions

Current created the most important trawling problem encountered, as strong currents occurred in the more desirable fishing depths, between the 20- to 40-fathom curves. Conditions were poorest off Cayenne, where estimated current speeds of 5 to 6 knots permitted only countercurrent dragging.

Sea and weather conditions during both cruises were favorable for shrimp trawling; and information received from authorities in Surinam indicates that heavy seas, which would stop fishing activities, are infrequent. The

(*Continued on page 27*)

* Taken from material prepared by H. R. Bullis, Jr., Chief Gulf Fisheries Exploration and Gear Research, and J. R. Thompson, Fishery Methods and Equipment Specialist, Branch of Exploratory Fishing and Gear Research, U. S. Bureau of Commercial Fisheries, Pascagoula, Miss.

RESEARCH IN OYSTER CULTURE SHOWS

Low Mortality Rate For Washington Oysters

Pacific Northwest oyster-growers may learn where to plant their crops and how to cultivate them more effectively, as a result of research, by a University of Washington professor, showing a 1.716 percent mortality rate for oysters in unpolluted state waters.

Dr. Albert K. Sparks, associate professor of fisheries, has been investigating the relative merits of three popular Washington oyster-growing areas—Willapa Bay, Hood Canal and Oyster Bay, between Olympia and Shelton.

"If we can learn why one place is better than another for growing oysters, we might be able to establish more precisely the factors necessary for successful oyster culture", Sparks explained. "Then, maybe we can predict where to plant oysters for best results."

The research was also designed to provide basic information about oysters living under normal conditions, away from pollution. Knowing the normal survival, it's easier to speculate on the abnormal.

"It is essential that we know first what the normal conditions are", Sparks said. "Otherwise, if you had a

Dr. Albert Sparks, associate professor of fisheries, University of Washington, checking oysters at Oyster Bay test station during research on mortality rate of state's oysters.

mortality of oysters in an industrial area, how would you know the number of oysters killed by waste and the number killed by natural causes?"

An investigation was begun early in 1959 to study the growth and mortality of 3,000 yearling Japanese oysters under modified field conditions. Seeking three test areas free from pollution, the scientists consulted oystermen and experts from the Washington State Shellfish Laboratory at Point Whitney, near Quilcene on Hood Canal. They selected three completely separated bodies of water and in each area chose points considered average for oyster-growing.

Japanese oysters were chosen for transplanting in the experiment, because 90 percent of oysters growing in the Pacific Northwest are of this variety. All were obtained from one source of supply, so that the only varying factors in the research would be the three Washington areas.

Oysters were taken first to the College of Fisheries where they were culled to "singles"; and their length, width, and depth were measured to the nearest millimeter. Additional size data taken were water displacement and the number of oysters necessary to fill a one-gallon measure.

Special oyster trays and floats for the project were made to order in the university's sheet-metal shop. Sparks designed the equipment, unusual in the Pacific Northwest but somewhat similar to commercial floats used in Japan.

Rectangular screen baskets or trays were made from expanded black iron, then dipped into a nontoxic tar preservative to prevent corrosion from salt water. The trays, tied to wooden frames, were floated on empty 55-gallon oil drums. The floats were secured by 180-pound anchors.

Describing the tests, Sparks explained that each float held four trays of 250 oysters each and a float was placed at each test area. At each station all oysters in the first three trays (designated experimental trays) were examined each week; those dying or recently dead were measured, and then prepared for later examination, in an attempt to determine cause of death. Boxes were measured and discarded. One normal oyster was taken from each experimental tray every other week for controls in histological study. Three oysters were taken from each experimental tray every other week for determination of condition. One hundred oysters from the experimental trays were selected at random from the trays and measured (to the nearest millimeter) for length, width, and depth.

The displacement of the measured oysters from each tray was determined and the number of oysters from each tray necessary to fill a one gallon measure was also determined. The associated fauna present in each basket was removed, enumerated, and preserved for subsequent study in the laboratory. The fourth tray at each station, also containing 250 oysters, was left undisturbed, as a control, to determine what effect, if any, the weekly handling had on the growth and survival of the experimental oysters. Water temperature, salinity, dissolved oxygen, and pH (amount of acid or alkaline were determined at each station each week.

The weekly tests were made from March to July at all three field stations. The pH in all three areas fluctuated between 7.65 to 8.10. No trend occurred in dissolved oxygen concentrations; the average dissolved oxygen was lowest at Oyster Bay and highest at Hood Canal. Average salinity was lowest at Willapa Bay and was highest at Oyster Bay. Again, variations were around the average. Temperature increased 9 to 10° C. at all stations from March to July (average temperature was 13.0, 13.0, and 14.0° C. at Hood Canal, Oyster Bay and Willapa Bay respectively).

The greatest increase in length, width, and depth from March to July occurred at Oyster Bay. Oysters in the control trays were examined in July at the three stations. Sixty-six oysters in each tray were measured. The mean shell growth from the beginning of the experiment and five months later was calculated. Increment in mean length and width was greatest at Oyster Bay, and least at Willapa Bay.

To compare the shell growth of experimental with control oysters at the beginning of the study and five months later, histograms of the experimental oysters were constructed along with the controls. Comparison of the mean length and width of experimental and control oysters definitely show that growth was greater in the control than in the experimental oysters. The mean depth of experimental oysters and controls showed little difference.

Mean lengths of random samples of the experimental oysters for all stations were plotted against the available temperature data. Sparks believes the warmer water tem-

(*Continued on page 31*)

Centralized Fishing Boat Controls

One man can effectively control all operations of vessel from wheelhouse with proper control center grouping of instruments*

THE appearance and interior of trawlers have altered much over the years mainly due to the advent of mechanical propulsion, the application of model test results, and the development of navigation and fishing instruments and equipment. To accommodate the added apparatus and to give centralized control, the bridge has increased in size, and is becoming the nerve center of the vessel.

The first central control system to be installed in any type of fishing vessel built in the United Kingdom went to sea recently in the British trawler *Hazlehead*, built by Cook, Welton & Gemmell Ltd. for the Aberdeen Near Water Trawler Ltd. The equipment in this vessel represents a major advance in control techniques to enable one man to control complete operations from the wheelhouse. Centralized control has also provided an opportunity for forward thinking by the designers of the vessel in streamlining and modernizing the shape of the wheelhouse.

The control unit is designed for vessels whose service does not warrant the inclusion of a gyro compass and automatic steering. It incorporates the hand electric steering control of an electro-hydraulic steering engine built into a console, an engine room telegraph with repeaters, rudder angle indicator, main engine controls, variable pitch propeller control also has provision for engaging and disengaging the clutch, enabling the main engine to be used for winching purposes when required.

The entire system is safeguarded by the inclusion of aural and visual alarms and provisions is made for easy changeover from the console to local control in the engine room, should it be required. Once such a change-over is effected the combined engine controller/telegraph then operates as a standard maneuvers telegraph. The electric steering control system is duplicated and controls the steering engine by means of two after power units. The complete system is cross connected so that either method of steering control can operate from either of the two after power units. In addition, the power supply to the steering control unit is duplicated and interchangeable.

If it is required, the electric steering control unit can include automatic steering using a gyro datum, as well as a gyro compass steering repeater. In this concept, course trimming, yaw and weather controls are also provided. The electric steering control, with or without automatic steering from a gyro compass datum, can operate with any form of electro-hydraulic steering engine and is entirely suitable for all types of vessels.

The rudder angle indicator is operated by a rudder angle transmitter directly connected to the rudder stock and therefore indicates exact rudder movement. Incorporated in the bridge unit also is a held indicator. This system is suitable for any type of vessel, including those where one man has to control operations such as trawlers, where direct rod gearing control of main machinery controls can be accepted.

Apart from the advantages of instantaneous steering control which greatly reduces fatigue, the system lends itself to the incorporation of remote steering controls to be placed anywhere in the vessel that may be required. For instance, in trawlers a small auxiliary unit is placed in the starboard trawl-control position, while in other examples remote steering controls would be placed in the bowbaulks or in the bridge wings. The electric steering control also lends itself particularly to its incorporation in any form of centralized control for convenient grouping of wheelhouse instruments.

Control console on English trawler "Hazelhead".

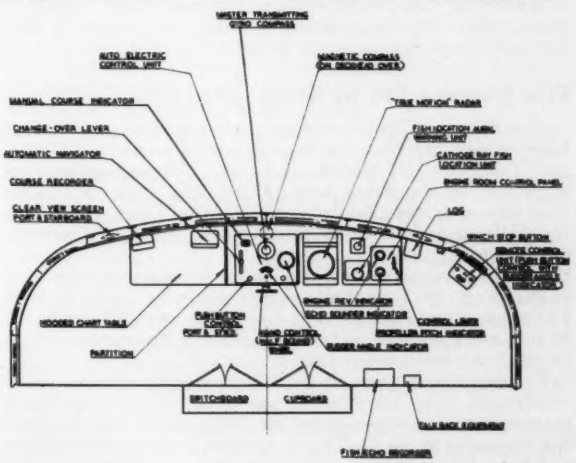
In the early days, the bridge was merely an open space above the engine room. Today, from the bridge, the speed and direction of the ship is controlled, the fish are detected, the trawl winch is operated, and ship-shore communication is maintained. Instruments give the skipper exact information about his vessel's trim and stability, and the speed of the various machines, and he has a "broadcast" weather map showing the approach of bad weather, so that he can avoid it. Electronics play an important part and automation is increasingly being adopted.

Changes in the Nerve Center

The growing importance of the bridge as the fishing vessel's nerve center has eliminated outside walkways and increased the size of the structure itself.

As more aids to control the trawler from the bridge come into use, they are installed at positions most convenient for the user and to meet any individual requirements, but in general the arrangement follows the same broad pattern. (*Continued on page 24*)

Plan for centralized control center in wheelhouse of trawler.



* Taken in part from material presented at the 2nd World Fishing Boat Congress, Rome, Italy, by A. C. Hardy, London, and H. E. H. Pain, S. G. Brown Ltd., Watford, Hertfordshire, England.

NORTH ATLANTIC

Gloucester Firm Considers Canning Atlantic Tuna

Gloucester's largest fish company is considering adding the canning of tuna, caught by Gloucester vessels, to its operations. Several vessel owners and captains are actively interested in catching tuna in nearby waters, but there is a question of price. One vessel owner said he and others would be very much interested in tuna fishing right now if assured of a minimum price that would guard them against loss.

Robert A. Kinney, president of Gorton's of Gloucester intimated that there are several problems to be solved. For example, much would be determined by the dependability of a supply big enough for commercial purposes. But, he said Gloucester can't ignore the existence of a supply of fish in nearby waters.

The Bureau of Commercial Fisheries is accumulating facts on where tuna are found. Joseph F. Puncochar, head of the North Atlantic Regional Office, hopes to help the industry by providing information showing that tuna may be found nearby in substantial quantities, during several months.

While a busy tuna industry would mean considerable investment by both vessel owners and shore businessmen, a beginning could be made without heavy expense, according to one vessel owner. Draggers could bring home tuna caught by long-lining, without investing in a new seining net, he said.

However, seining for tuna would be inviting for Gloucester fishermen if they had a profitable market. One owner said the next move is up to the men who have canning facilities. All they have to do is to offer a reasonable minimum price. The vessel owner thought 10 cents a pound might work out for both fishermen and canners. This would be $200 a ton for tuna.

If someone supplies the gear, our boats will go tuna fishing, according to Capt. Eugene Marino, owner of the 86-ft. dragger *Sunlight*. "I feel that Gloucester boat owners would be interested in going for tuna," Marino said. "But it would be a good thing if all the burden wouldn't be on the boat owner. The gear investment is so big that if the dealer would supply the gear, it would encourage the boats to go into it. If the price of tuna fell too low, the boat owner could withdraw without taking too much of a beating."

Marino estimated the gear would cost close to $8,000 for long-lining and it would take about 100 tubs of Nylon line to make a string of around 12 miles. He figured that the fishermen would have to get no less than 8½ cents a pound for their tuna even if the gear were loaned to them. Crew members could average from $150 to $200 a week on one trip a week, he said.

File License Bill in Massachusetts

A commercial fishing dragger with a crew of 10 would have to pay the State of Massachusetts an annual license fee of $31 if a bill filed by two Cape Ann representatives is passed by the State Legislature. Rep. John F. Dolan, Ipswich, and Rep. Beatrice K. Corliss, Gloucester, filed the bill because of a petition from several Gloucester dragger fishermen.

The bill requires all boats, weirs or floating trap nets engaged in commercial fishing activities, to obtain a $10 commercial license for a boat with crew of three and $3 for every additional crew member. License fees would be used to benefit the industry.

The same legislators filed a bill proposing that any nonresident is to be required to pay $100 plus $25 for every man over a three-man crew, but if the extra is a resident, the charge is to be $3. This is similar to the law in Maine and New Jersey.

Commercial Fisheries Bureau Scientists Open New Gloucester Laboratory

The first step in the process of transferring the technological research activities of the Bureau of Commercial Fisheries from East Boston to the new laboratory building on Emerson Ave. has been taken. The standards and specifications unit whose activities are aimed at establishing high quality standards for fishery products, moved in recently with the bulk of the equipment and all of the personnel scheduled to arrive in Gloucester shortly.

Furnishing the new and up-to-date laboratory with the latest and best in refrigerating equipment will involve several months time. Therefore, according to Joseph F. Puncochar, Director of the North Atlantic Region of the Bureau of Commercial Fisheries, it will probably be early spring before the region's new technological research program will become fully operative, at which time a formal open house and dedication is planned.

The roster of laboratory personnel making the move from East Boston to Gloucester numbers 25 and is under the supervision of Samuel R. Pottinger, Laboratory Director.

Director of Home Economics For Maine Sardine Council

Veteran radio and television personality Mrs. Agnes F. Gibbs of Portland and Gorham, Maine has resigned her position with the Maine Radio and Television Company to enter the employ of the Maine Sardine Council as Director of Home Economics. Mrs. Gibbs assumed her new duties, on a full time basis, December 1st, and will initially concentrate on the promotion of greater usage of Maine sardines in the nation's school lunch and home economics programs.

Mrs. Gibbs was the Home Demonstration Agent for Cumberland County under joint sponsorship of the University of Maine and the United States Department of Agriculture for 16 years. During World War II she was in charge of 50 Civil Defense Canning Centers in Maine.

Elect Maine Seiners, Wiermen's Officers

Hugo Lehtinen, Jr., Spruce Head, Maine has been named secretary-treasurer and Ralph Byers of Winter Harbor, president of the Maine Seiners and Weirmen's Association at a recent meeting in Rockland.

Maine Whiting Bills Delayed

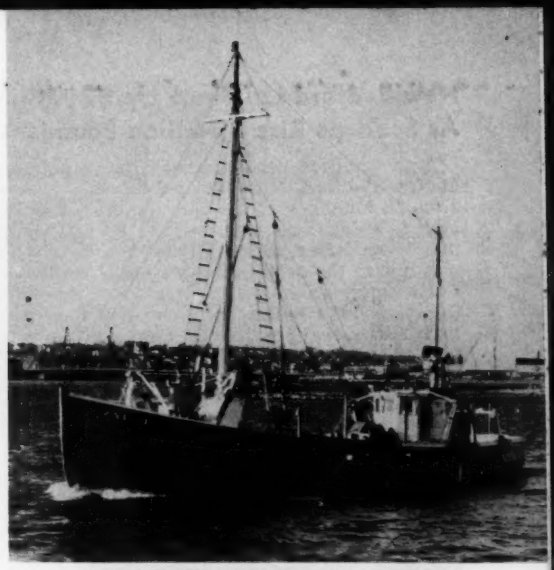
Whiting fishermen in Maine waters will probably continue unrestricted next year. After setting January 18, 1960 for the start of a special session of the Maine State Legislature, the late Gov. Clinton A. Clauson, Democrat, and Legislative leaders of both parties, recently ruled out two bills that would have prevented whiting dragging in the Casco Bay area and vicinity. Such laws could have hampered the activities of Gloucester whiting draggers and fishermen.

The first bill would close Casco Bay and adjacent waters to fishing by otter trawls. The second bill would limit the size of otter and other trawls in Casco Bay and adjacent waters. The Governor and Legislative leaders in passing upon what bills to approve for a special session, must consider whether or not the situation explained in the bill existed before the previous regular session. The whiting situation did exist before the previous regular session of 1959.

The Governor and leaders also say that if a new situation has developed since the previous regular session, then it is an emergency that can't wait until the next regular session.

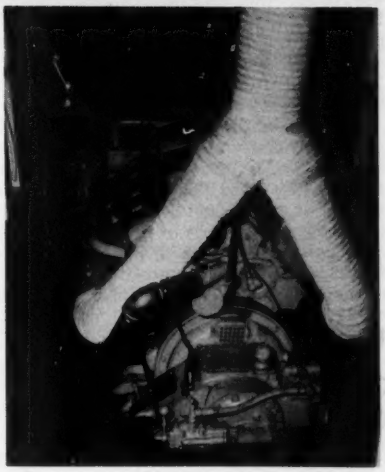
Building New Maine Lobster Boat

Capt. James Seymour, Jr. of Cliff Island, Me. is having a new 32' lobster boat built at Baum's Boatyard, Kennebunkport, Me. She will be powered by a D273, 85 hp. Allis-Chalmers Diesel, with 1.5:1 Capitol hydraulic reduction gear, sold by Harbor Supply Oil Co., Portland.



Three generations of the Tichon family of New Bedford, Mass. aboard the "Val T." Left to right, Manuel Gonsalves, installation engineer for D. N. Kelley & Son, Inc.; William J. Hall, sales engineer for Hubbs Engine Co.; Dannie Tichon and Ronny Tichon; their grandfather, Hervey Tichon, Tichon's Fish & Fillet Corp., owner of the vessel; and his son, Everett Tichon, port captain.

"Val T" of New Bedford Gets New Power, More Capacity



The 78' New Bedford, Mass. dragger "Val T." (shown above on engine trial) and her new 12V-71 General Motors Diesel, furnished through Hubbs Engine Co. Capt. Martin Mortensen is skipper, and the vessel was renovated by D. N. Kelley & Son, Inc., Fairhaven, Mass.

Following extensive renovating, repowering and re-equipping, the 78-foot groundfish dragger *Val T.* returned to fishing out of New Bedford, Mass. early this month. Her skipper is Capt. Martin Mortensen, Lawrence Vincent is engineer, and she carries a 7-man crew.

The vessel's new power plant is a 12V-71 "V" Series General Motors Diesel, rated 335 hp. at 1800 rpm., with 4.15:1 Twin Disc reduction gear and 3:1 power take-off. On her engine trial, the Val T. made better than 10 knots, swinging a 5-blade, 56 x 36 Michigan propeller. The engine was furnished through Hubbs Engine Co., being sold and installed by D. N. Kelley & Son, Inc., Fairhaven, Mass.

Alterations and improvements made on the dragger at the Kelley yard included all new wiring and piping, rearrangement of pilot house, addition of two fish pens to give hold capacity of 60,000 lbs. of iced fish, caulking; and painting of hull, engine room, fo'c's'le and fish hold with International paint.

Today the 18-year-old, 59-ton dragger is one of the best equipped vessels in the fleet. New equipment installed includes two sets of 32-volt Exide batteries for lighting and engine starting, two Marine Products pumps on both main and auxiliary engines, 4" Tobin Bronze tail shaft, Goodrich Cutless rubber bearing, Raytheon Mariners Pathfinder, Model 1500 radar, Raytheon DE102 Fathometer, two lorans, and Marmac engine controls.

The vessel carries 4,000 gals. of fuel, and is lubricated and fueled with Texaco products. Other equipment includes Hathaway winch, Raytheon radiotelephone, White compass, Deseco-Lister 7½ hp., 5 kw. Diesel auxiliary unit.

The *Val T.* is owned by Val T. Corp. of which Hervey Tichon is president. He also heads two fish concerns located on Homer's Wharf, New Bedford. Tichon's Fish & Fillet Corp., specializes in processed seafood, marketed under Tichon's Brand; while Ronny & Dannie Fish Corp. is a wholesale packer of round fish. Important species handled are yellowtail, fluke, lemon sole, black-backs, scallops, cod, and haddock; as well as tilefish, scup and butterfish in season.

There are four other vessels in the Tichon fleet, each operated by a separate corporation, with Tichon as president. He has been in the fish business for 16 years, and prior to establishing his present firms, he formed Mutual Fish Co. at Fairhaven, of which he was president and general manager. His son, Everett Tichon, is port captain of the fleet. Two grandsons, Ronny and Dannie, while still attending school, have worked part-time and are expected to eventually join the business.

All of the Tichon vessels have been repowered in the last two years and are radar equipped. Three are draggers and have General Motors 6-110 Diesels—65' *Althea*, Capt. Tobin Vig; 69' *Mary J. Landry*, Capt. Harry Risdell; 71' *Sharon Louise*, Capt. Peter Roche. The 83' scalloper *Catherine C.*, Capt. Keefe Murphy, has a D375 Caterpillar Diesel.

Dock Facilities Available at New Bedford

In an effort to provide more dock space for fishing vessels and attract new fish buyers and packers to the New Bedford-Fairhaven, Mass. area, additional facilities are being made available by Joseph Perry, New Bedford contractor and fishing vessel owner.

At Fairhaven a new pier, 500 ft. long and 100 ft. wide, is being constructed on the property of Frank C. Taylor, Inc., marine contractors, of which Perry is treasurer. The inner portion is being built on solid rock and gravel fill, while the outer end will be pile and timber. The pier adjoins a public street, is adjacent to the Fairhaven fish freezing plant, and extends to the harbor channel.

The other property is on the New Bedford side of the harbor, adjacent to the Fairhaven Bridge. Work has been completed on laying an asphalt surface and installing a chain link fence on a 150 x 100 waterfront area, with docking space on two sides. The total space available is 66,000 sq. ft., and there are two railroad sidings on the property.

Perry is ready to erect buildings on either location to suit the needs of prospective tenants, and both land and buildings will be available for rent or lease.

New Bedford Landings Up $2 Million As Scallops Rise 3 Million Pounds

A two million dollar increase in valuation of landings at New Bedford, Mass. during 1959 has been reported by John V. Mahoney of the New Bedford Office of the U. S. Fish & Wildlife Service despite the fact that total landings were under those of 1958. The decrease in landings was due to the drop in industrial fish hails.

The total valuation for the year was $15,814,000 for the city's 108,178,000 pound catch of food fish, industrial fish and sea scallops. In 1958 the valuation was $13,747,000 for 111,668,000 pounds. Cod, haddock and scrod landings and valuations were higher in 1959 than the year previous, and the scallop total was 3,000,000 pounds above 1958.

The total catch by specie and its valuation for 1959 includes 6,875,000 pounds of cod valued at $641,000; haddock, 5,500,000 pounds valued at $588,000; scrod, 3,898,000 pounds valued at $363,000; lemon sole and blackback, 6,887,000 valued at $1,055,000; dabs, 1,067,000 pounds, valued at $145,000; fluke, 3,868,000 pounds valued at $880,000; grey sole, 468,000 pounds valued at $60,000; yellow tails 21,027,000 pounds valued at $2,369,000; tile, 416,000 pounds valued at $68,000; swordfish, 574,000 pounds valued at $186,000; sea scallops, 18,815,000 pounds valued at $9,098,000; industrial fish, 37,929,000 pounds valued at $290,000.

The 1958 landings and valuations by specie were 5,954,000 pounds of cod valued at $545,000; 4,533,000 pounds of haddock valued at $453,000; 3,644,000 pounds of scrod valued at $364,000; 7,120,000 pounds of lemon sole and blackback valued at $1,096,000; 803,000 pounds of dab valued at $99,000; 3,599,000 pounds of fluke at $906,000; 462,000 pounds of grey sole valued at $54,000; 24,866 pounds of yellowtail at $2,163,000; 974,000 pounds of tile at $94,000; 481,000 pounds of swordfish at $171,000; 15,253,000 pounds of sea scallops at $7,390,000 and 42,828,000 pounds of industrial fish at $308,000.

Oceanographic Institution Gets Research Ship Grant

A $3,000,000 grant by the National Science Foundation to the Woods Hole Oceanographic Institution to build an ultramodern ocean research vessel was announced recently in Boston. The grant, first and largest of its kind under an accelerated program of government aid to private scientific institutions, was hailed as a major step in the study of the seas for peaceful and military purposes.

Dr. Paul M. Fye, director of Woods Hole Institute on Cape Cod, said, "I feel confident this will be the finest research ship in the world when completed." He said the 175-ft. unnamed vessel's range and sea-keeping abilities will enable scientists to push their studies into high latitudes toward the poles and during the winter when seas are roughest. The vessel's larger laboratory space and living quarters will permit more scientists and trainees to go to sea to pursue their researches.

Dr. Fye said he hoped the vessel would be in service within two years, replacing the Woods Hole research flagship *Atlantis*.

Francis Minot, co-designer of the *Atlantis*, described some of the special equipment that will be installed in the new vessel which he also is designing. Among these innovations will be anti-roll tanks in which water can be pumped from side to side to counterbalance and reduce rolling by as much as 50 per cent when the ship is stopped, he said.

Also being considered are a bow propeller to help maneuvering, a viewing port in the bow about 10 feet below the waterline and a center well to protect delicate instruments when lowered into the water, he said.

Special attention will be given to quiet operation for underwater sound work. A bulb bow will be installed to reduce pitching, he added. The all-steel vessel, which resembles a West Coast tuna clipper, will displace 1,040 tons. She will be 36 feet in beam and will be powered by a 1,100 hp. direct drive Diesel.

She will have a range of 7,000 miles at cruising speed of 12 knots. Total complement will be 37, of which 19 will be scientists and the rest crewmen. Preliminary design plans are being prepared by M. Rosenblatt & Son, New York.

Galilee Finds New Fish Market

The commercial fishing industry at Galilee, R. I., found a new market for industrial fish and was scheduled to begin shipment at the end of December. Arrangements were being made to truck a maximum of 120,000 pounds a day to New Bedford, Mass., for processing fish meal, according to Jacob J. Dykstra, president of the Point Judith Fishermen's Cooperative.

Dykstra said that he and members of the cooperative met with the owners of the plant and learned that production at Galilee will not be resumed until May 1. In the meantime, Dykstra said, the plant owners have volunteered the use of their Galilee facilities to assist the fishermen in shipping fish to the new market.

By comparison with peak summer landings of non-edible fish, the shipments to New Bedford will be small. Dykstra said the cooperative is continuing its search for other new markets, and has two other prospects.

Delaware Bay Blight in Check; Control Program Planned

The oyster blight in the Delaware Bay area is under control through natural causes and scientists have hit upon a long-range scheme for returning the area's oyster beds to normal productivity. According to Dr. Harold Haskin, professor of zoology at Rutgers University and director of the New Jersey Oyster Research Laboratories. Haskin, also disclosed there has been "no significant mortality" among Delaware Bay oysters in the past year.

"There is no question", Haskin said "that the oyster population can be restored to the Delaware Bay." He said the identity of the oyster destroyer has been established scientifically as a parasite.

Since there has been no noteworthy mortality among Delaware Bay oysters this year, Haskin noted, it is logical to conclude that the parasite is no longer operating in the area. However, the parasite is as prevalent as ever, but it is encountering a strain of oysters that is disease-resistant.

If the oysters were left untouched for about 10 years, Haskin says, they would probably defeat the disease, by the natural process of producing disease-resistant qualities. But with the cooperation and establishment of spawning groups and spawning sanctuaries, it may be possible to hasten the cycle and whip the killer much sooner.

New Radiotelephone on Gloucester Boat

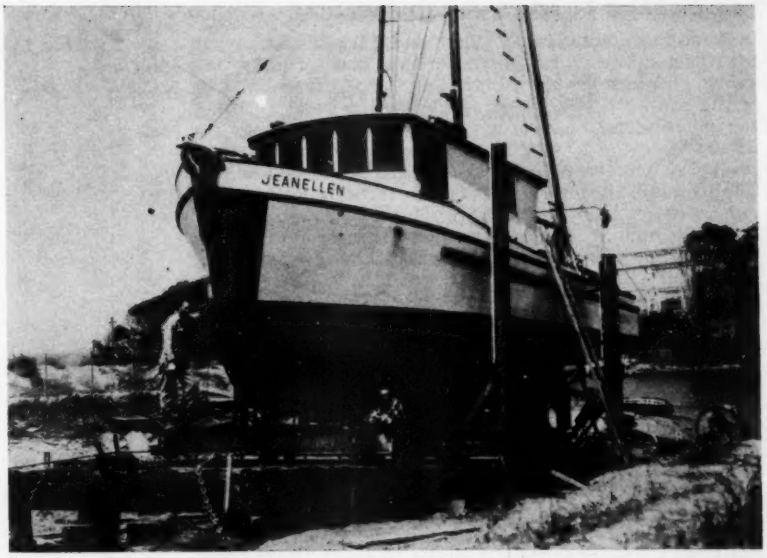
The Gloucester, Mass. dragger, *St. Victoria*, Capt. Antonio Brancaleone, has been equipped with a new 150-watt Northern radiotelephone. The set was sold and installed by Louis Posner Marine Radio Equipment, Inc.

New Bedford Boats Repowered

The New Bedford, Mass. dragger, *Malvina B.*, owned by Capt. Luciano Martinho is being repowered with a 6-110 General Motors Diesel. The engine was furnished by Hubbs Engine Co. and sold through R. A. Mitchell Co., Fairhaven, Mass., who is making the installation.

Capt. Michael B. Smith's 95' dragger *Noreen* of New Bedford, Mass., is being repowered at Hathaway Machinery Co., Inc., Fairhaven. Her new engine is a Model LRDBCSM Waukesha Diesel, rated 510 hp. at 1200 rpm. Sold by Hathaway, it is equipped with Snow-Nabstedt 3971-352 hydraulic 3.5:1 reduction gear and 2:1 power take-off. It will have an Ingersoll-Rand starter and swing a new 64 x 46, 4-blade Federal propeller.

PACIFIC COAST



The 47' "Jeanellen" on the ways at Moss Landing, Cal., and owners Norris and Errol Scriver of Santa Cruz. She is powered with a Caterpillar 65 hp. engine and is equipped with a Fisher direction finder, Northill anchor, depth sounder, and automatic pilot.

Salmon Commission Outlines New U.S.–Canada Regulations

The International Pacific Salmon Fisheries Commission last month made its recommendations for regulating American and Canadian fleets in this year's Fraser River salmon season. Commissioners said the size of the United States fleet will not be changed. The Canadian fleet in the Strait of Juan de Fuca will be limited to 45 purse seines and 100 gill nets.

The commission predicted that the allowable catch will be 2,000,000 sockeye salmon this year—divided equally between the fishermen of the two countries. The principal sockeye run in 1960 will be the Chilko River run.

These are the commission's recommendations for regulating sockeye and the pink-salmon fishing in American treaty waters this year: All United States treaty waters —closed June 20 to July 18, except for spring-salmon nets in waters east of the William Head-Angeles Point line. Spring-salmon nets must have a mesh of not less than 8½ inches;

West of William Head-Angeles Point line—from July 18 to August 7 purse seine open daily from 4 a.m. to 8 p.m. Mondays through Wednesdays; gill nets open daily from 6 p.m. to 8 a.m., from Monday evening to Thursday morning. This area will be closed to all fishing August 7 to August 28; East of William Head-Angeles Point line—from July 18 to August 14 purse seines and reef nets open daily from 4 a.m. to 8 p.m. Mondays through Thursdays; gill nets open daily from 6 p.m. to 8 a.m. Monday evenings to Friday mornings; from August 14 to September 18 purse seines and reef nets open daily from 4 a.m. to 8 p.m. Mondays and Tuesdays; gill nets open daily 6 p.m. to 8 a.m. Sunday evenings to Tuesday mornings.

Washington Hearing Reviews Indian Fishing Regulations

A public hearing to discuss proposed regulations for control, use and distribution of fresh chum salmon taken from Indian-reservation waters was held recently by the State Department of Fisheries at its Seattle office. The proposed regulations would contain a condition that chum salmon will not be fished for nor taken during weekly closed periods mutually agreed upon by the director of fisheries and the Indian tribes.

The proposals are a new attempt by the Department of Fisheries to control Indian fishing in the interests of conservation, Milo Moore, director of fisheries, said. Indians are exempt from state regulation, except as the tribes voluntarily agree to abide by them. Moore said it is believed that the state has the right, however, to establish a permit system to control the distribution of fish after they are caught.

Want Annual Meeting to Promote Fish and Aid Fishermen in Oregon

A three-day fisheries conference held in Astoria, Oregon recently, to promote bigger and better use of fish in the home and to educate fishermen on matters advantageous to their welfare, is destined to become an annual event, according to its sponsors. Dr. Edward Harvey of the Oregon Seafoods Laboratory, Astoria, and the local fisheries advisory committee, headed by Harold Thom, stated that many of those attending the conference, expressed the hope that there would be a repeat of the conference each year, and that plans are in the making.

Among the matters discussed, some in panel form and others in open-round-table style, were the antibiotic preservation of fish and refrigeration, by Dr. H. L. A. Tarr and John S. M. Harrison, of the technological station of the Fisheries Research Board of Canada, Vancouver, B. C.; the value of advertising campaigns in building up consumer demand for fish products, by John Buker, Portland, Oregon, vice-president of Botsford Constantine Advertising Agency; wave length and rules of radio communication procedure for the safety of fishing boats, by J. H. Hallock, Portland, of the Federal Communications Commission; and improved marketing needs for the fishing industry, by Dr. G. B. Wood, Oregon State College economist.

Other subjects covered were local refrigeration; the technical aspects of refrigeration repair; gasoline and Diesel engines; boat aid and maintenance; a talk on first aid by Harry Lewis, of the Oregon Industrial Accident Commission; and a talk on navigation and seamanship, by Ray Hughes. of the Astoria Navigation Company.

Dan Allen, of the Governor's national resources committee for market expansion work for the bottom fish industry, one of the main speakers during the conference, stated that there should be more state help for market expansion, but that the industry itself should determine how this best could be provided.

A film on the enormous value of the Fraser river sockeye salmon fishery was shown by T. F. Sandoz, president of Columbia River Packers Association, and one on the seal fishery activities in Alaska, by the U. S. Coast Guard; and a film on boat aid and rescue, by the Coast Guard.

Seattle Men at Laws of Sea Meeting

Three representatives of Seattle's fishing industry went to Houston, Tex., for a conference and briefing last month on plans for the International Conference on Law of the Sea, to be held next spring in Geneva.. The Houston meeting was called by the State Department. The fishing industry is greatly concerned over proposals of several nations to increase the limits of territorial waters. The United States recognizes only a three-mile limit, but some nations claim as much as 200 miles.

Seattle men at the Houston meeting are John Wedin, representing otter trawlers; Harold Lokken, representing the halibut-fishing industry, and Edward W. Allen, representing the salmon industry. State officials in Pacific Coast states have asked that a similar conference be held somewhere in the West.

California Must Pay Fishermen For Losses Incurred by Ban

California fishermen who suffered financial loss because they were banned from net fishing in the lower Sacramento river for salmon and shad in 1957 are entitled to some reimbursement, the State Supreme Court has ruled. Claims from fishermen, who claim the ban caused their specially-designed boats and nets for that type of fishing to lose value, have been piling up since the Legislation approved the ban.

At the same time as the anti-netting ban was passed, the Legislature appropriated $350,000 to meet the loss claims of men in the industry. But State Controller Alan Cranston has refused to release funds for payment of the claims, saying he considered its disbursal illegal despite the Legislative appropriation. The court decision will force him to act. Claims now total about $600,000. Presumably the $350,000 will be apportioned to the claimants on a pro-rata basis.

Warne Urges Harvesting of Underdeveloped Resources

California Fish and Game Director William Warne told a fishing industry gathering in Monterey that fishermen have only to use their own initiative to reap new harvests from the sea. He added: "Some marine resources are underharvested or not being touched at all."

He said the department had to show the fishermen how to catch the ocean shrimp but that "the innate ingenuity of the fishermen and processors can find ways to catch and market other untapped species." Warne noted that expanded information service planned by the department in the marine resources field would sweep aside "fallacious arguments that this or that group of fishermen, sport or commercial, is hurting anyone else."

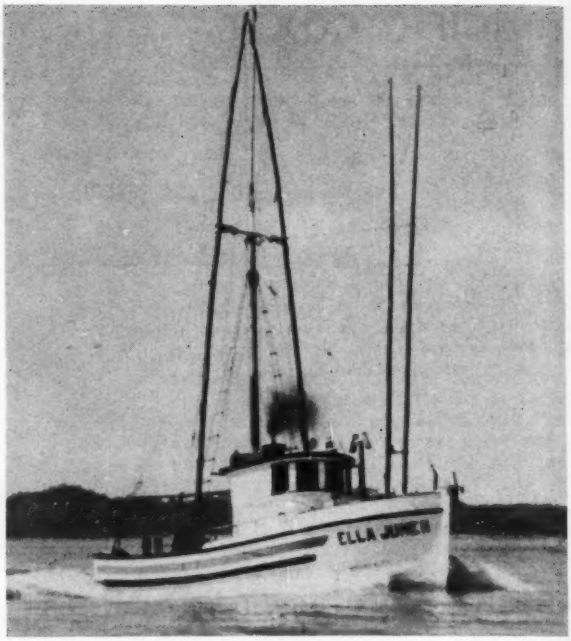
Nuclear Energy For Fishing Discussed

A plan to use nuclear energy for fishing has been developed for the U. S. Atomic Energy Commission. At the request of the Commission, the Stanford Research Institute, California began exploring ways to increase the world's food supply. More efficient harvesting of the seas was one of the ideas turned up by its scientific staff.

The nuclear experts suggested equipping large fishing vessels with atomic power generators capable of sending a powerful current into the water from two negative electrodes suspended hundreds of feet from each vessel. Because fish have a unique reaction to electricity, they could be corraled, the scientists believe.

The fish turn their tails to the negative pole in an electric current and swim head-on toward a positive pole. Thus, thousands of fish would swim toward the electrified hull of the fishing vessel, to be sucked aboard by nuclear-driven fish pumps.

The experts went further and suggested that each ship



Astoria, Oregon, fishing vessel owned by Henry H. Eskola, "Ella June II".

be equipped with a nuclear-powered cannery for fillets and chowder, and a nuclear-powered plant to make fertilizer out of the remains.

It was also suggested that submersible atomic reactors be built and lowered to the ocean floor to heat the water slightly. This would send the bottom water welling upward and with it the plankton—the tiny plants and animals that are enormously rich in protein.

Chemical Company To Pay Fish Losses

The Stauffer Chemical Company recently was ordered to pay the California Department of Fish and Game $13,369 in civil damages, plus court costs, for striped bass lost in the May 1957 fish kill off the company's Richmond, Contra Costa County, plant. The verdict was hailed by Regional Manager Robert L. Jones of the Fish and Game Dept. as a major victory in the fight against pollution in San Francisco Bay. "This case serves notice that the people of California place a substantial value on their fisheries resources and want to see them protected," Jones commented.

The State had charged the chemical company with responsibility for the loss of a minimum of 2,000 striped bass. The company had acknowledged dumping at least 25 tons of acid per month into San Francisco Bay, in addition to other wastes, but contended that some discharge other than its own was more probably responsible for the kill. Long-term waste discharge requirements for the Stauffer plant are currently being considered by the San Francisco Bay regional water pollution control board.

Oregon Crabbers Demand Higher Prices

A group of 40 Warrenton, Oregon crab fishermen and crab boat owners, representing 28 boats, announced this month that they were joining with the Washington Crabbers Association and would stick to their demand of 14 cents a pound for crab. The price, set in December at the beginning of the crab season in the Warrenton area and mouth of the Columbia River, is the same as that asked for at Grays Harbor, Wash., and Newport, Ore. But

crab processors stated that the market didn't warrant a price increase from 12 to 14 cents.

Consequently, crab and drag fishing fleets both remained tied up at their docks in the Warrenton-Astoria waters, awaiting a solution to the price dispute and a settlement between fishermen, boat owners and the Alaska Fishermen's Union.

The Fishermen's Marketing Association of Oregon, Inc. (boat owners) have stated that they would honor their contract with the fish companies and would adhere to their working agreement aboard the boats with the Alaska Fishermen's Union, with minor changes.

AFU spokesmen indicated that they would like to discuss the working agreement aboard boats to find out what the "minor changes" would be. Boat owners said they did not expect an increase in prices of bottom fish from local packers. There was no indication in Astoria when either the dispute on crab prices or the otter trawl tieup would hit "fair weather."

Columbia River Meeting Held By Oregon, Washington

The Oregon Fish Commission and Washington Department of Fisheries held a meeting in Astoria, Ore., recently to discuss informally with the interested public background information on the Columbia River runs.

Staff members of the two departments presented material similar to that presented at previous regulation hearings, and in addition, summarized the catches and escapements of the past season as related to these runs. This was a preliminary meeting to obtain recommendations from industry representatives, fishermen, and any other interested parties regarding the management of this very valuable resource.

Astoria November Landings Up

The Astoria, Oregon, otter trawl fishery produced 1,004,900 pounds for November 1959 showing an increase of 604,200 pounds over November 1958. The increase was due mainly to rises in flounder of 29,400 pounds, rockfish of 66,800 pounds and English sole of 274,100 pounds. The Astoria shellfishery for the same period increased 50,200 pounds to 86,300 pounds. The tuna fishery in the same area for November 1959 was 362,000 pounds over the November 1958 catch.

Monofilament Gillnets Banned By Oregon Commission

At its regular monthly meeting held early last month in Portland, the Oregon Fish Commission voted to prohibit the use of monofilament gillnet mesh in Oregon. This action will tie in with Washington's present ban on monofilament nets.

Monofilament has been used for sportfishing lines for several years, but has only recently been woven into gillnets. It is more effective than conventional linen or nylon nets because it is practically invisible in water and permits effective use in daylight hours.

Oregon and Washington biologists stated that use of these nets possibly could increase catches and necessitate other restrictions on the already severely restricted Columbia River gillnet fishery.

Joseph Valich

Joseph J. Valich, 55, of Seattle, Wash., widely known in commercial fishermen's circles, died recently of a heart attack. Valich was manager of the Purse Seine Vessel Owners' Marketing Assoc. He previously had been associated with the Pacific Marine Supply Co. and the Nordby Supply Co. in commercial fishing gear sales. He had represented purse seiners in their relations with state and other agencies regulating the fishing industry.

SOUTH ATLANTIC

Locate Clam Beds Off North Carolina Coast

The *Silver Bay*, research trawler chartered by the Bureau of Commercial Fisheries, caught 45 bushels of ocean clams in six hours recently about a mile east of Beaufort inlet. Francis J. Captiva, field party chief, says there is a good source of clams both east and west of the inlet. He termed the supply "potential commercial stock." The clams run about 4 inches in diameter and yield a gallon of meats per bushel.

Captiva said of the *Silver Bay's* success, "We've just touched a small area, using one small rake. What we did (in one day) would be a good week's pay for two or three men on a shrimp vessel." The 45 bushels of clams were taken in a radius of about 200 yards. One half-hour tow yielded six-and-a-half bushels. The *Silver Bay* is using a Fall River dredge, a 14-tooth type used on small boats to sample clam beds.

Captiva says that *Silver Bay* explorations indicate the clams are in four to six fathoms on both sides of Beaufort inlet, five to six miles to the west and as far east as Cape Lookout light.

The sea clams have been located in mud bottom, not sand. Captiva recalled the work of the ocean clam dredge, *Monte Carlo*, off Beaufort inlet in early 1958. The dredge turned up many ocean clams, but claimed there weren't a sufficient number for it to operate profitably in this area.

Captiva suggested that perhaps the mud, in which the clams are found, clogged the *Monte Carlo's* dredging apparatus which consisted of a huge hose that shot away the muck covering the clams so that the dredge could come behind and pick them up. Mud, Captiva explains, does not affect the efficiency of the rake used by the *Silver Bay*.

Seeking Breeding Grounds Of Virginia Croakers

The *Pathfinder*, Virginia Fisheries Laboratory research vessel, has been searching Chesapeake Bay and the Atlantic Ocean for croaker breeding grounds. The boat has traversed hundreds of miles in outer bay and coastal waters.

The exploration covered 60 miles of the Atlantic coast and extended 50 miles out to sea. At 30 designated stations water samples were taken, water temperatures recorded, and drift bottles released for ocean current study. Plankton tows were made with large nets and a specially designed deep-water sampler.

This is the first exploration made specifically to locate areas where croaker eggs are laid and larval fish develop. Laboratory scientists anticipate making trips every month during the year to establish the time and place of spawning not only for croakers but also for menhaden, spot, grey trout and other fishes.

Scientists will be busy examining and identifying eggs and larvae taken in the collecting gear. In some cases it may be necessary to hatch the eggs and carry them through the larval development into fish large enough to be recognized.

Hampton Roads Boat Landings Rise

Catches landed by boat in the Hampton Roads, Virginia area for December 1959 totaled 1,598,700 pounds for an increase of 366,200 pounds over December 1958. The rise was due primarily to increases in fluke of 263,300 pounds and scup of 138,800 pounds.

Virginia Crab Season Above Average

According to some of the captains of the 100 fleet crab dredge boats in Virginia waters, this has been a better than average season for crabs, and the demand is good. The crabs are in good condition, and the catch is fair. There has been no sign of the muscle plague that existed in the 1958 season, and the price has gone from five to six cents. The Hampton Roads area for December has produced from four thousand to 21 thousand pounds daily; the Lower Northern Neck has produced approximately 800 pounds daily and the Eastern Shore approximately 700 to 800 pounds daily.

Good Virginia Oyster Supply

The predictions early this season of an oyster scarcity in Tidewater Virginia have not materialized. Most dealers who depend upon the natural rock source of supply have had enough oysters to fill their demand, and the demand has been heavy. In some instances there have not been enough standards, more popular this season because they are always one dollar per gallon cheaper than selects. All prices per gallon rose $1.00 this season.

Throughout December, the Hampton Roads production ran from five to six thousand gallons daily. In the lower Northern Neck usually a heavy producer, the output was from three thousand to five thousand gallons daily. The Eastern Shore area averaged from two to four thousand gallons daily.

Expect Potomac Fishway to Double Catch

The Potomac River fish catch is expected to be doubled within the next 10 years as a result of the new Snake Island fishway through Little Falls Dam, according to Fish and Wildlife biologists. Opening of the $550,000 project means the Potomac shad, herring, rockfish and alewives will have an additional 10 miles of river for spawning, etc.

Virginia Has Good Bass, Scallop Catches

A good early run of sea bass is reported in the Hampton Roads area. Draggers started bringing in catches the first part of January, said to be the best ever for this time of year. Usually heavy production doesn't start until February or March, and for the last two years early season catches were extremely light.

The area also reports good supplies of fluke and average production of porgies. Isaac Fass, Inc. of Portsmouth, Va. continues to handle a sizable fleet of scallopers, including a number of Northern vessels. A productive supply of scallops within a radius of 50 miles and milder weather have been influential in attracting outside fishermen. According to Stanley Fass, 80 percent of the scallops packed by his firm are going to new untapped markets. Most of the shipments are in fresh form, and many consumers are buying fresh scallops for the first time.

Maryland Bars Potomac Oyster Dredging

The Tidewater Fisheies Commission reported recently that there are only limited stocks of oysters in deep waters of the Potomac River and opening the river to patent tonging would cause "almost irreparable damage." The report was released by Dr. H. C. Byrd, Commission director, following a preliminary engineering and scientific survey of the river's resources.

Byrd invited Somerset County legislators and any Eastern Shore watermen as they care to bring along with them to go along on a second survey of the river to see the situation for themselves. He said St. Mary's and Charles County watermen will be invited to attend.

The Somerset legislators have tried for years to get the river opened to dredging or patent tonging, which they feel would make it economically feasible for the watermen to come across Chesapeake Bay and gather oysters. They contend that oysters lie in abundant quantities in water too deep for shaft tonging, presently the only legal means of harvesting in the Potomac.

The 40-foot oyster dredger and shrimper "Zena Mae" owned by R. B. Hodges of Washington, N. C. has a Lathrop Marine engine, Delco batteries, Tobin Bronze shaft, and Columbian rope.

Best Striped Bass Year In Maryland History

The 1959 commercial catch of striped (rock) bass already is the largest in Maryland history, reports the Chesapeake Biological Laboratory, and the supply of fish also looks good for 1960. Although figures are in for only the first nine months of the year, 1959's harvest of 3.8 million pounds is .9 million greater than the 12-month total for 1958, itself one of the best years previously reported.

George J. Murphy, Laboratory fisheries records analyst, said the catch during the summer quarter, a traditionally slow period, was just above half a million pounds in the Chesapeake and tributaries. The 1959 catch was 50 percent greater than in the same 1958 quarter, although the haul seines were not used as much. The unusual summer catch followed record catches last winter and spring.

The record catch verifies a prediction made last winter by Dr. L. Eugene Cronin, Laboratory director, and Dr. Romeo Mansueti, senior fisheries biologist. Both have also predicted that 1960 should equal or exceed 1958 and possibly 1959.

Maryland Requests $800,000 and Plans New Patrol Fleet

The Maryland Tidewater Fisheries Commission proposed recently that it be granted $800,000 in additional spending for fiscal 1961. If granted, the requested hike in general funds would boost the department's spending program to $2,065,249. Most of it would be used to rehabilitate the state's oyster industry.

Meanwhile, at a meeting in Annapolis the Commission announced plans to put its own "mosquito fleet" to work chasing smaller craft which are used to illegally dredge oysters in the Potomac and then outrun law officers.

The Commission approved plans to purchase smaller vessels to augment its present force on the Potomac. Chairman H. C. Byrd said the small boats will be able to travel at speeds of up to 35 miles per hour, compared to a present maximum of around 25 mph. for most patrol boats, and will cost only $3,500 each compared to $20,000.

He said probably four to six will go into operation next year if sufficient funds are available. Others may be added later. The Commission voted to begin standardizing the rest of its enforcement fleet with vessels around 38 feet long, compared to some which now range up to 46 feet.

In other action at the meeting the commission authorized scientific survey of Potomac River oysters of sufficient quantity to permit use of patent tongs as opposed to hand tongs. The survey has been requested by a Legislative Council committee.

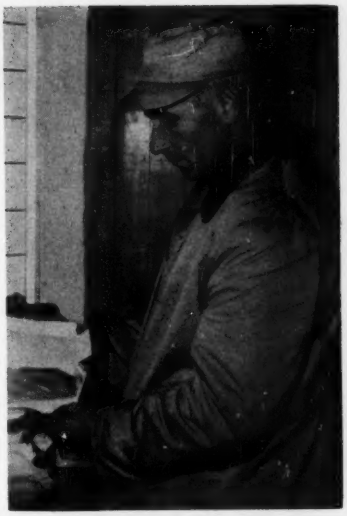
Maine Quality Improvement Program Proves Effective

A sanitation-quality program designed to improve the handling of fish aboard fishing boats has proved so successful that it is being expanded to include quality and sanitation checks of Maine fish processing plants. Begun a year ago by the Maine Department of Sea & Shore Fisheries under a contract with the U. S. Bureau of Commercial Fisheries, the program has encouraged the fishing industry to standardize methods of handling fish in order to improve and maintain quality. When the Federal contract ran out, Maine Sea and Shore Fisheries Commissioner, Ronald W. Green, convinced of the importance of the project, decided his department would continue the work as long as funds permit.

The program has been conducted by Leroy Benner of Rockland, who as a former trawler captain is well acquainted with the industry. During his first 12 months on the job, Benner made regular sea trips aboard 14 fishing vessels of the Maine fleet. While on board, he assisted and instructed the crews in the proper washing, eviscerating, stowing, icing and unloading of fish.

On completion of each trip Benner made detailed reports and recommendations, copies of which were made available to the boat owners and operators. In addition to his trips to the fishing grounds, he also inspected 49 vessels at dockside, again furnishing reports and recommendations.

Most of the vessels, Benner reports, consistently landed catches of from good to excellent quality. In cases where improvements were needed, he found that insufficient use of ice was the most common mistake. Improper handling of fish and sub-standard sanitation procedures aboard the vessels came next. In his annual report Benner noted that the program had been effective. Many of his recommendations have been followed, he said, even though such compliance is strictly voluntary on the part of the owners, and the quality has consistently improved.



Leroy Benner, Maine Sea & Shore Fisheries Dept. inspector for state's quality control program.

Summing up, he reported: "Methods have been developed during the past year by which the loss from spoilage or inferior quality can be substantially reduced and the economy of the industry greatly improved." Since the termination of the Bureau of Commercial Fisheries contract, Benner has included in his inspection program the state's fish processing plants—especially those handling ground fish, ocean perch and whiting.

Working mainly in the Rockland and Portland areas, he is making careful checks of the sanitary conditions and physical requirements of each plant. In addition he examines periodic samples of the finished product in its frozen, thawed and cooked states. Special attention is paid to such characteristics as odor, color, degree of hydration, firmness, general appearance, and condition of the package.

Maryland Seafood School in Prospect

The board of directors of the Crisfield, Maryland, Kiwanis Club, and the membership of the Crisfield Rotary Club, have agreed to co-sponsor a Seafood School in Crisfield, for the general benefit of the seafood industry. The school will be designed to show how the industry is handled in other sections of the United States and abroad. In some cases films will be used.

Plans are to hold the school once a month, probably Saturday afternoon or evening, with experts present to speak on seafood subjects, with discussions planned by a local committee including Dr. Carl Dunker, head of the Seafood Biological Laboratory at Crisfield. It is understood that watermen from other sections are interested in having the school set up.

St. Augustine Shrimping Best in Decade

Shrimp production in the St. Augustine, Fla., area for the season just ending was about 25 percent greater than last year, according to John R. Salvador who operates a major wholesale seafood outlet there.

Salvador stated that from the standpoint of volume this was one of the best shrimp seasons in the past decade for the North Florida and South Georgia shrimp industry.

Salvador, whose family is one of the pioneers of the Florida shrimp industry, said the volume of shrimp brought to St. Augustine would total between 750,000 and 1,000,000 pounds.

Salvador stated he was of the opinion the ban on night fishing from September until May was the major reason for the increase in production this year. The ban was enacted by the 1959 Legislature.

"Fishing day and night", he explained, "doesn't give the shrimp grounds an opportunity to settle. If the nets constantly disturb the feeding area the shrimp will move around making fishing more difficult."

The night fishing ban was one of the major legislative goals of the Southeastern Fisheries Assoc., headed by L. C. Ringhaver of St. Augustine. The Association is hopeful of enacting additional conservative measures in the 1961 Legislature, Salvador declared.

Another factor in the increased production was heavy rainfall this year which caused the shrimp to remain longer in their breeding areas. The longer the shrimp remain in the fresh water breeding area the larger in size they will be when they migrate to the ocean. The St. Johns River is one of the most important shrimp breeding areas in the State. Other conservation practices for protection of small shrimp contributed to the boost in production, Salvador explained.

Excellent South Carolina Shrimp Take

The second most productive shrimp season in South Carolina history came to a close in December. Dr. G. Robert Lunz, director of the commercial fisheries division of the South Carolina Wildlife Resources Dept. said 7,177,711 pounds of shrimp were taken in South Carolina coastal waters. Not since 1950, have so many shrimp been caught.

Bailey Heads Tampa Shrimp Group

The Tampa Shrimp Producers Association, Inc., has announced the appointment of B. W. "Wes" Bailey as General Manager, replacing Don McKee, who resigned recently to go into business for himself. Bailey was formerly associated with Jacksonville Freezers, Inc., as president.

EQUIPMENT and SUPPLY NEWS

New V-8 Imperial Heads Chrysler Line

Leading the line of Chrysler Marine engine power this year is a 225 hp. V-8 Imperial—the latest design of the Marine Engine Division, Chrysler Corp., 12200 E. Jefferson Ave., Detroit 15, Mich. The new Imperial is described as a premium engine and claims more power per pound of engine weight and features a low, trim silhouette. It develops 225 hp. at 4000 rpm., has an 8.1:1 compression ratio, displaces 361 cubic inches, and has a 4.12 inch bore plus 3.38 inch stroke.

The Chrysler marine line includes two othe V-8 type engines plus four in-line six engines. The Sea V develops 177 hp. at 3600 rpm wih 318 cu. in. displacement. The Imperial V 275 is the most powerful engine in the Chrysler marine line. Rated at 275 hp. it has 354 cu. in. displacement.

The four 6-cylinder in-line Chrysler engines include: Ace, 110 hp. at 3600 rpm.; Crown, 125 hp. at 3600 rpm, both with Paragon hydraulic reduction gear; Ace special, 110 hp. at 3600 rpm.; Crown Special, 135 hp. at 3600 rpm., both available with Chrysler manual or hydraulic reverse gear.

Special features of all Chrysler Marine V-8 engines include oversquare, short stroke design, and splashproofed ignition systems with spark plugs protected against moisture by ignition cable cover. The distributor has water shedding protection and the generator is sealed. The mechanical valve tappets are accessible for adjustment, while faster warm-up and smoother idling result from water-heated intake manifold; Exhaust manifolds are water-jacketed, and an equal water supply to each bank of cylinders is assured because of a dual pocket water pump.

White Offers New Echo Depth Sounder

A new product of Wilfred O. White & Sons, Inc., 178 Atlantic Ave., Boston 10, Mass., is the Transcentury echo depth sounder. Its 5" dial and super-bright echo-flash record 24 soundings per second on the 100' depth dial with twice-around range. It is powered entirely by flashlight batteries, is completely waterproof, and can be mounted anywhere. It is easy to install or is available for portable use. The unit is constructed of cast aluminum with bronze transducer.

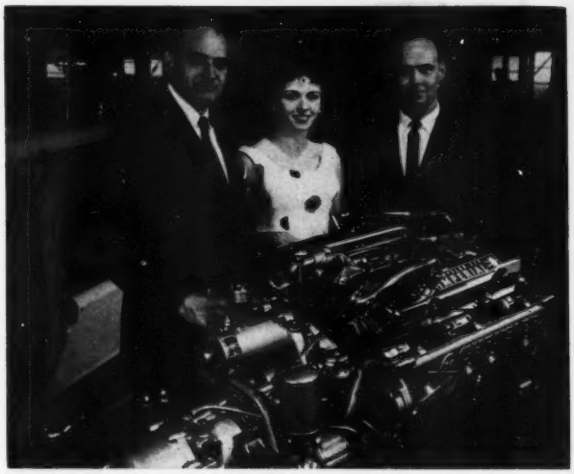
Also available is the White Windmaster, which provides wind-speed and wind-direction information. It features split-vane construction, and a masthead unit of 3 revolving cups that generate and transmit electricity to the 4" twin indicators. The two scales read 0-50 and 0-120 mph. No external current is required.

Citizens Band Radiotelephone by Kaar

A new radiotelephone, the "D", has been designed by Kaar Engineering Corp., 2995 Middlefield Road, Palo Alto, Calif., for short range, marine communications.

The Kaar "D" is a 5-watt mobile unit designed for operation on any two of the 23 channels in the 26.96-27.33 mc. frequency band. It is available for either 12-volt dc. or 117-volt ac. operation, with a 6-volt dc. model to follow soon. With average operating conditions the effective range is between 5 and 10 miles, while greater ranges are possible over large bodies of water.

The unit is dual channel, with crystals on transmit and receive. A signal Level Meter and power output peaking controls are featured. As are a superheterodyne circuit with automatic noise limiting and automatic volume control. The unit is only: 8¾" x 5" x 8" and weighs ten pounds.



Chrysler 225 hp. Imperial marine engine. Left: L. E. Nelson, vice-pres., sales. Right: W. M. Vollendorf, marine sales manager.

RCA Has Compact Radar, Depth Indicator

A new compact radar unit for small craft, announced by the Radio Corporation of America, provides a scanning range up to 18 miles. The indicator unit measures 9 x 12 x 12 inches, and contains a full 7-inch cathode ray scope.

There are four operating ranges from one-half mile to the full 18-mile limit. A simple flick of the range selection switch changes the surveillance area portrayed electronically on the face of the cathode ray tube. Operating in the 3.2 centimeter super high frequency band, the RCA small craft radar can draw its power from 12, 24 or 32-volt batteries, as well as from 115-volt direct or alternating current systems.

The rotating antenna is housed in a radome with a diameter of only 26 inches. Employment of a transistorized power supply and "economy-conscious" circuitry reduces the power drain to 300 watts, little more than the average radio-telephone.

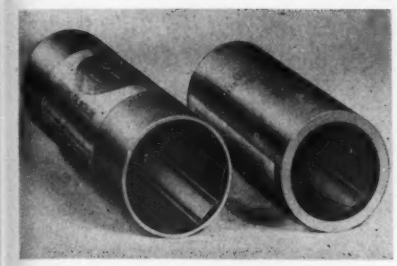
Newly introduced by RCA is a new transistorized depth indicator for small craft use. The Depth-O-Meter III operates on easily-replaced flashlight batteries or the unit can be linked to a boat's power source. It has a range of 0 to 120 feet.

The transducer can be mounted through the boat hull or over the side for easy removal. The Depth-O-Meter case is entirely watertight.

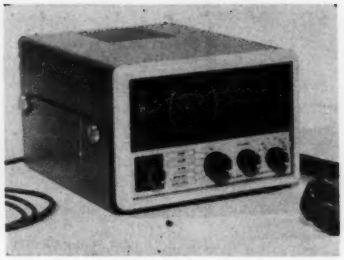
Jabsco Announces New Model Pump

Jabsco Pump Co., 1485 Dale Way, Costa Mesa, Calif., has announced a new self-priming bronze pump, Model 7420-1¼" (vertical ports) designed for foot mount installation.

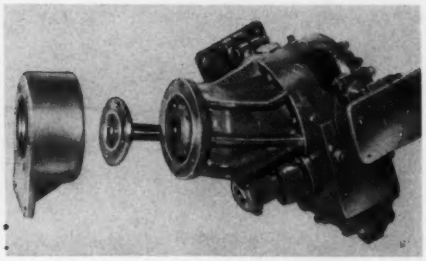
The unit is equipped with mechanical shaft seals and replaceable seal seat, reversible wear plates, and is ball bearing sealed and lubricated for long life. It is self-priming at all speeds, with vertical dry suction lift approaching 15 feet; has only one moving pumping part (a neoprene impeller); and can be easily serviced. The pump is designed to operate up to 2450 rpm., delivering 72.5 gpm. against a 10 foot head. Overall measurements are 6" x 7¾" x 5" and weight is approximately 12¾ pounds.



Thin wall Goodrich Cutless rubber bearing.



Bendix Skipper 303



Walter Down-Angle reduction gear.

Thin Wall Goodrich Cutless Bearing Line

A new line of thin wall B. F. Goodrich Cutless rubber bearings have been designed specifically for small strut applications. They permit replacement of thin wall bronze bearings by the owner and are also used as original equipment.

Lucian Q. Moffitt, Inc., Akron 8, Ohio, national distributor of Goodrich bearings, carries them in warehouse stock in sizes from ¾" to 11½", representing one of the most complete line of rubber bearings available.

Cutless rubber bearings are made of a special oil-resistant rubber compound which is not affected by sludges and waste chemicals. Shock, noise and vibration are absorbed by the rubber portion of the bearing structure, providing quieter, smoother boat operation.

Cutless bearings are lubricated by water to form almost frictionless contact, enabling the shafts to spin effortlessly. Particles of sand and grit entering a Cutless bearing simply depress the soft rubber lining and, as the shaft rotates, are pulled along and washed away by the lubricating action of the water before damage results.

Bendix Makes Seven Depth Sounders

The Bendix-Marine (8211 Lankershim Blvd., North Hollywood, California) 1960 depth sounders include units able to record 1-foot to 1200-feet. Flasher and recording types are among the line of seven models available.

The Model DR-19 recorder has five scales of 60-feet each, for a total of 300-feet. By separating the recording scales into five units, the two-inch wide tape gives an effective paper width of 10-inches. Model DR-18 recorder is scaled in fathoms and has three scales of 20-fathoms each for a total depth of 60-fathoms. Both units are available for 12 or 32-volt systems. A new type ceramic transducer has been developed for greater power and sensitivity and is available with a through hull stuffing tube, or as a separate unit for mounting within a fairing block.

The Bendix DI-5 Depth Indicator features the Bendix Bright-Lite neon flasher tube, and permits easy reading of the depth flasher even in bright sunlight. The 5-inch diameter scale is graduated to 240-feet in one-foot increments.

The DI-5 Depth Indicator has an integral transistorized power supply, to reduce battery drain. The unit is mounted on a bracket permitting adjustment of the viewing angle, and mounting of the indicator on a shelf, bulkhead or from the overhead. Twelve and 32-volt models are available.

New Walter V-Drives Introduced

Walter Machine Co. Inc., 84-98 Cambridge Ave., Jersey City 7, N. J., is now manufacturing several sizes of V-Drives which can be directly mounted to the Paragon and Warner hydraulic marine reverse gears. These direct-mounted V-Drives can be supplied in cast iron and aluminum construction. Installation is simple and does not require special tools. Suitable adapters are supplied for each installation. Standard V- Angle of the direct mounted V-Drive is 20 degrees. Four standard gear ratios are offered from 1:1 to 3:1 reduction at no extra cost.

Walter also manufactures a line of V-Drives which are independently mounted and can be used with any engine. The Firm also produces Down Angle reduction gears, conventional reduction gears, transfer drives, Clean-Flo keel cooling systems and propeller pullers.

New Columbian Rope Calendar

The 1960 calendar put out by the Columbian Rope Co., Auburn, N. Y., features traditionally a famous painting from the company's marine collection. The painting is called "Salute to The Ranger" and shows the first recognition of the American Flag by a foreign power. The painting is by Jack L. Gray, a young Nova Scotian artist. The new calendar describes briefly the story behind the painting.

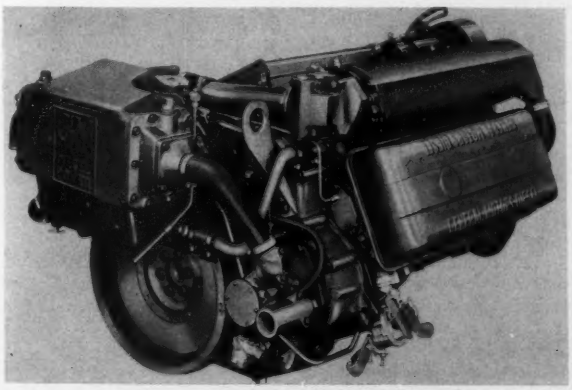
General Motors Unveils Inclined Diesels

General Motors Corp., 13400 W. Outer Drive, Detroit 28, Mich., is featuring two 130 hp. Diesels that are inclined models of the "4-53" introduced last year. The tilted block results in a front-end height of 16 inches measured from the shaft centerline. The flywheel has been moved to the front as an aid in small boat installations.

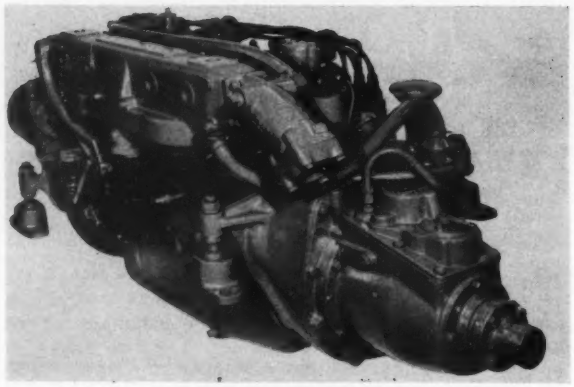
The engines are designed to permit installation of Diesel power without major modifications to the engine compartments or standard gasoline engine beds. Other "53" models extend Diesel power to boats as small as 22 feet.

Another pair of General Motors Diesels offered for the first time is the "53" six-cylinder V-type for 28 to 50-foot boats. The light, compact engines deliver 195 hp. and have a height of 24 7/16 inches. Length is 295/16 inches. According to company spokesmen, these units develop crusing speeds equivalent to gasoline engines of 225 hp.

General Motors Diesel engines for larger boats include a 4-valve, "6-71E" engine of 171 continuous shp., designed for maximum economy. Eight-and 12-cylinder "V-71" engines of 336 and 504 hp. and a 335 hp. "6-110" are also available.



One of General Motors new Series 53 Diesel inclined engines.



Graymarine engine Model 109.

Graymarine Has 29 Marine Engines

Six marine Diesels are made by Gray Marine Motor Co., 710 Canton Ave., Detroit 7, Mich., covering the 25 to 190 hp. range. They are 4-cycle type, naturally aspirated, and feature "Cushioned Power" energy cell combustion, providing metered control of pressures during the power stroke.

The 6-cylinder models have counter weighted crankshafts. The 227 cubic inch, 60 hp., 4-cylinder model is equipped with Lanchester Balancer for greater smoothness. All models have damper drive.

The Six-D427, rated 130 hp. at 2400 rpm., weighs 1500 pounds. Other models range from the small Four-D129, rated 25 hp. at 2000 rpm. and weighing 656 pounds, to the 2900 pound Six-D802, rated 190 hp. at 2200 rpm.

Gray lists 23 gasoline engines available in reduction gear ratios from 1.5:1 to 3:1. The line includes nine 4-cylinder engines, 25 to 90 hp.;-five small 6-cylinder engines from 109 to 136 hp.; five big sixes 150 to 200 hp.; and four V-8's from 135 to 225 hp.

The Graymarine 4 and 6-cylinder engines have operating speeds of 2000 to 3400 rpm., piston displacement ranging from 91 to 427 cubic inches, and long stroke providing greater torque. Heavy duty cylinder blocks have water jacketing all around every cylinder bore.

Gray Fireball V-8's have operating speeds of 3800 to 4400 rpm. Light weight and compactness are designed for greater pay load and speed. A new model with piston displacement of 327 cubic inches, rated 188 hp. at 3800 rpm., has loading characteristics desirable for reduction gear drive

Pacific Marine Supply Distributing Entire Linen Thread Line

Pacific Marine Supply Co. of Seattle, Washington, will serve Washington and Alaska as exclusive distributor for the commercial fishing products of The Linen Thread Company, Inc., Blue Mountain, Ala. They will handle Barbour's Nylon seine netting, Barbour's Double Knot Nylon gill netting, Gold Medal cotton netting, Gold Medal Filament Nylon and cotton seine twine, Pauls Lockknot Nylon gill netting, Adams Best Double Knot Nylon gill netting, Imperial Knot salmon gill netting, Nyak seine netting and Nyak seine twine, Knox's Knotless Nylon seine netting, and Netset, a netting preservative.

Fast service to even the most remote fishing ports in the Alaska-Washington area for every type and size of netting is one of the planned results of the association of the two companies. Pacific Marine Supply Co. maintains a large and completely equipped net shop for the fashioning and rigging of seines and gill nets to meet all requirements, a service it supplements by carrying complete lines of other fishing products.

Remote Release for Seafarer Life Raft

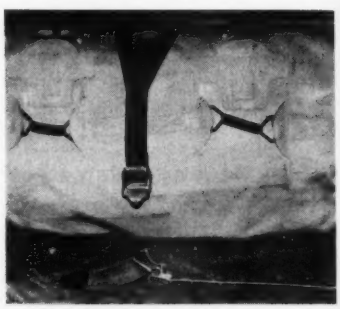
A remote release buckle, unfastened by means of a stainless steel cable running to the cockpit or pilothouse, now is furnished with Seafarer inflatable life rafts for quick launching. The buckle is attached to the bridle of Nylon webbing which secures the raft to the deck. It is used with the raft that is packed in a heavy neoprene valise, and is especially suitable for smaller boats.

Made in 4 to 25 man capacities, Seafarer rafts also are available in fiber glass stowage containers and collapsible wooden boxes.

The 4-man raft measures only 38" x 20" fully packed, and is designed for small boats which have no space to carry dories or life boats. It has the same quality of material and equipment as the larger rafts. One of these rafts, in a wooden box, has been placed aboard Capt. Richard J. Nunan's 35' *Elizabeth N.* which is used for lobstering and dragging out of Kennebunkport, Me.

Fortune Inc. of Portland, Me. has been made a sales, service and inspection station for Seafarer Life Rafts. Gloucester Grocery & Boat Supply, Inc., Gloucester, Mass., and C. W. Wharton, Jr. of Stonington, Conn., have been appointed sales agents.

Recent sales of Seafarer rafts in fiber glass containers include 8-man models for the Portland trawler *Gulf Stream* and the Boston dragger *Agatha*, a 7-man model for the Portland dragger *Theresa R.*, and a 12-man raft for the New Bedford scalloper *Aloha*. Capt A. J. Pedersen of Portland, Me. is U. S. distributor of Seafarer Life Rafts.



Remote release on Seafarer inflatable life raft. Pulling of stainless steel cable running to cockpit or pilot house, unfastens buckle on bridle used to secure raft to deck.

States Electronics to Service Bludworth

The Bludworth Marine Division of Kearfott Co., Inc., Clifton, N. J. has announced that its service and parts supply will be carried on by States Electronics Corp. 846 Magie Ave., Elizabeth, N. J. and 11 Jacob St., New York, N. Y. as an independent operation.

States Electronics will also service Kelvin Hughes echo depth sounders, Cossor radar, British Thomson-Houston radar, and Magneti Marelli radar throughout the United States at Bludworth Marine's present base ports.

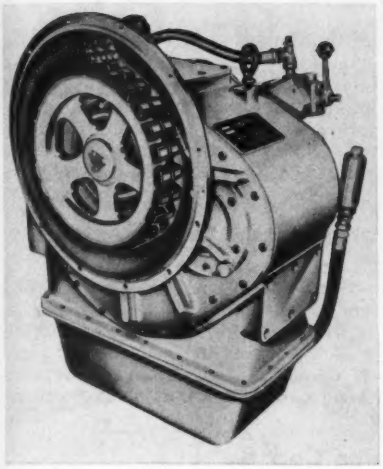
Bludworth's New York service personnel are joining States Electronics with Fred Rosenka as service manager, in charge of operations, and Leon Armstrong as purchasing and export manager.

Kearfott announces the appointment of Willard C. Blaisdell as Director of Marine Instrument Sales. Prior to this appointment he was Manager of Sales and Service for the Bludworth Marine Division of Kearfott.

Stainless Steel Columbian Propellers

Columbian Bronze Corp., Freeport, N. Y., has added stainless steel to the line of alloys offered in its propellers. Stainless joins Electralloy bronze and Superston in the line, and is available in the same sizes as the company's other propellers.

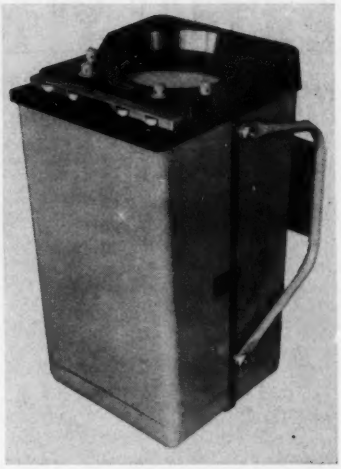
A variety of stainless alloys will be available, but it is expected that Type 304 ELC with carbon held to .03 percent maximum will normally be offered, as this alloy provides most ideal characteristics for most propeller service.



▲ Apelco AR-9 Citizens Communicator

◄ Deep case Twin Disc MG-512 reduction gear.

Raytheon Radar 1700 ►



Extend Twin Disc MG-512 Gear Range

To extend the application range of its MG-512 Marine Gear, Twin Disc Clutch Co., Racine, Wis., has introduced a "deep case" version of the gear with a choice of three reductions ratios—4.5:1, 5.16:1 and 6:1. These increase to seven the total number of ratios now available in the MG-512 (the others are 2:1, 3:1, 4.15:1 and 4.4:1).

Although the center distance of the gears in the high-ratio units is greater, the new box is less than 4" deeper than that housing the lower-ratio models. Otherwise all MG-512 units are virtually identical in design.

Performance features include smooth, instantaneous response by means of fingertip hydraulic control valve, full horsepower in forward or reverse, rubber block drive to compensate for possible misalignment, oil cooled clutches and mechanical "come home" feature.

Twin Disc MG-512 Marine Gears are recommended for use with the following engines: (All ratios) Allis-Chalmers 21000; Caterpillar D337F; Cummins NHRS, NRTO; General Motors 6-110, 8-V-71. (All ratios except 4.4:1) Caterpillar D342 Series C; Cummins NVH-12-M; General Motors 12-V-71; International UDT-817; Murphy CBD 243; and Waukesha WAKDBSM.

New Raytheon Radar and Telephones

Raytheon Company has announced a new low-price radar designed for fishing vessels and smaller commercial craft. The compact two-unit Mariners Pathfinder radar Model 1700 has an indicator which features a large, seven-inch cathode ray tube. Four range scales are provided: ½, 2, 6, and 12 miles. All have illuminated range rings for navigation and plotting use and a heading flasher to orient the operator.

The antenna is a double-banked slotted wave-guide four feet wide for optimum target resolution. The outgoing radar beam is two degrees wide to give the finest detail and definition even of small harbor buoys. The targets can be picked up as close as 20 yards. The new Model 1700 generates 7,500 watts peak power while drawing less than 450 watts from the boat's power supply. It can operate without additional converters or other accessories directly from 12, 24, 32, 110 or 220-volt dc. systems.

A new Raytheon radiotelephone, the RAY-85X is designed for high seas operation on board fishing vessels. Eleven crystal controlled channels include the conventional inter-ship and ship-to-shore ranges. Also included are the high frequencies necessary to assure reliable long-range communications for vessels working far from home bases. With an output power of 85 watts, it covers the frequency spectrum from 2,000 to 24,000 kilocycles.

Operating over a frequency range of 2,000 to 9,000 kilocycles, the new RAY-90 has eight crystal controlled channels, and is designed for long distance communications even under unfavorable conditions. A new transmitter, the RAY 150, is a high power unit with a 150/250 watt input and five crystal controlled transmitting channels between 2,000 and 4,500 kilocycles.

New Apelco Radiotelephone, Depth Sounder

Applied Electronics Co., Inc., 213 E. Grand Ave., So. San Francisco, Cal., is entering 1960 with a new Apelco AR-9 2-way Citizens Band radio, providing five-channel, Class D service on the 11-meter Citizens Band. Both transmitter and receiver are quartz crystal controlled for high stability. The receiver is sensitive superhetrodyne type that includes noise limiter and adjustable squelch for muted standby. The transmitter has trim-tab control for greatest power output. Operation is full press-to-talk. There are three, epoxy protected models: 12-volt dc., 32-volt dc., and 115-volt ac.

Apelco also is offering a new Model MS-8 power-type depth sounder for small boat operation, and MS-10, a deluxe version of the MS-8. Both units operate with Apelco's exclusive transom-mounted transducer TM-8 for full-vision reports of water depth to 100 feet. The MS-10 has gimbal type mount for optimum viewing angle. The Dial is extra-large.

Broadhurst Is Made Brownell Official

Russell Broadhurst

At a recent meeting of the Board of Directors of Brownell & Company, Inc., Moodus, Conn., manufacturers of Nylon Seine Twine, Russell Broadhurst was elected vice-president in charge of operations. For three years, he served as Sales Manager of the firm's Industrial Division.

A graduate of Lowell (Mass.) Textile Institute, Broadhurst, prior to his association with Brownell, for 18 years was a research chemist in production development for Russell Manufacturing Co., Middletown, Conn. During this time, he was also superintendent of their Research Development and Finishing Department.

GULF OF MEXICO

New Oyster Size Minimum May Continue in Pass Christian

If the laws are properly enforced, it may be possible to continue catching two and one-half inch oysters off the Pass Christian, Miss. tonging grounds, members of a recent inspection party said. Factorymen, members of the Mississippi Seafood Commission, seafood union officials, and other interested parties agreed on the great abundance of oysters on the state reefs during the inspection which was conducted on the commission boat *Uranus*.

The size of oysters has been reduced from a three to two and one-half inch minimum size limit on the Pass Christian reef since early December and during the first ten days Commission Chief Inspector Clarence Canaan said about 6,000 barrels of oysters had been taken off the reef.

"We haven't even scratched the surface", Canaan said, and he also noted that by tonging the reef thoroughly, the reef will not be as crowded and will improve.

Some factorymen said that the oysters taken from the reefs are yielding from 21 to 24 cans to the barrel when processed. Most of the oysters presently being caught are for steam stock.

The Mississippi Gulf Coast Seafood Assoc. is presently working to find ways to get more controlled fresh water on Mississippi's oyster reefs.

Factory owners on the inspection said that some of the tongers are earning as much as $40 a day by catching oysters two and one-half inches and more. Three of the factorymen said they are employing more than 100 factory workers who are processing the catches.

Close-In Shrimping Opposed By Corpus Christi Committee

The Corpus Christi, Texas, shrimping committee recommended recently than an ordinance be passed outlawing commercial shrimping in Corpus Christi Bay within 2,500 feet of the shoreline.

The committee, in a report to the City Council, said local police could enforce the law, using the harbormaster's patrol boat. The council appointed the committee several weeks ago to study commercial shrimping in the bay after the annual complaints were received about shrimpers netting close to shore.

The Committee also reported that the state law prohibiting shrimping within one mile of the city limits of a city is in apparent conflict with another state law which could permit shrimping in all the bay.

Local fisherman will be willing to pay the initial cost, estimated at $600, of erecting markers to designate the 2,500 foot limit. The committee further recommended that an attempt be made during the next session of the Legislature to have provisions of the proposed ordinance enacted into state law. This would give the State Fish and Game Commission authority for enforcement, the report said.

Close Public Aransas Pass Oyster Reefs

Public oyster reefs in Aransas Bay, located in the Aransas and Nueces counties of Texas, have been closed by the State's Fish and Game Commission, according to an announcement by Howard Lee, director of marine fisheries. He stated that "the reefs in Aransas Bay have been overworked and damaged, and production is such that the areas have been closed as a conservation measure."

Vote to Join Union Cast By Port Isabel, Brownsville

A resolution petitioning the Seafarers International Union AFL-CIO for membership was passed at a meeting of some 250 shrimpers from Port Isabel and Brownsville, Texas. The meeting was held in Brownsville, and shrimpers voted to ask the Union for a charter after hearing Union organizers explain the benefits offered by the organization.

The shrimpers currently belong to the Rio Grande Shrimpers Assoc., but will dissolve the Association and become a part of the Seafarers International Union, according to a spokesman for the group. This source said his group had been negotiating with the Union since July.

Mexico Seizes Two Texas Vessels

Two American trawlers working out of Texas were recently seized by Mexican gun boats. The Mexican government claims jurisdiction nine miles from shore, but the trawler crew claims to have been farther out.

The gunboat crew which seizes a U. S. trawler has the right to share in the auction of the cargo, rigging and gear and split up the proceeds. U. S. shrimpers claim the Mexican gunboats illegally seize American trawlers to collect rewards and commissions.

Louisiana Shrimp Production Up

Louisiana's shrimp industry made a strong comeback in 1959 from a low point in 1957, the Louisiana Shrimp Association reported recently.

Total landings at Louisiana ports for the first 10 months of 1959 were 54 percent greater than the same period in

"Dew Drop", 48' oyster boat owned by Capt. Hamilton Landry, Grand Isle, La., uses a 95 hp. Gray gasoline engine to turn a 26 x 18 Michigan propeller. She uses Esso fuel and lubricating oils and is equipped with Columbian cordage, Northill anchor, Kaar radiotelephone, White compass.

TWO IDEAL WATERFRONT SITES

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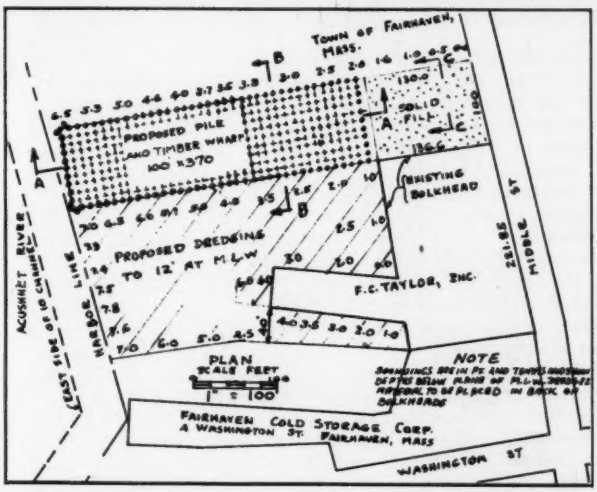
Fairhaven Dock Site and Plan



WILL RENT or LEASE and ERECT BUILDINGS to SUIT TENANT

FAIRHAVEN SITE: New 500 ft. pier, 100 ft. wide now being constructed. Inner portion on solid rock and gravel fill. Outer end will be pile and timber. Directly adjacent to street for convenient access. Will dredge for 12 to 15 ft. water depth. Pier extends to Harbor Line on Harbor Channel. Fish Freezer on adjoining property.

NEW BEDFORD SITE: 66,000 sq. ft. of space, on waterfront adjacent to Fairhaven Bridge. Newly improved dock, with asphalt surface and chain link fence. 100 ft. frontage on harbor plus 150 ft. dock space on side. 15 ft. of water. Two Railroad Sidings on property.

New Bedford Dock Site

a Growing, Progressive Fishing Port

New Bedford produced 108,000,000 lbs. of Seafood in 1959, valued at $16,000,000. Homeport for 175 fishing boats, including 70 scallopers and 70 groundfish draggers.

New Bedford is Number One Food Fish Port in value on Atlantic Coast. World's Largest Scallop Port with 1959 production of 19,000,000 lbs. worth $9,000,000.

Write or phone for complete information

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MARINE CONTRACTORS

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50 Middle Street **WYman 2-1767** **Fairhaven, Mass.**

1958, according to figures of the Fish & Wildlife Service.

The shrimp association said that Louisiana is now second only to Texas in the production of shrimp. The association gave credit to the cooperation of the Louisiana Wildlife and Fisheries Commission for conservation measures taken when production was at a low ebb in 1957.

Mid-Water Trawling Test Successful in Mississippi

A succesful commercial-scale mid-water trawling test in the Gulf area was reported at Pascagoula, Miss., by the Fish & Wildlife Service vessel *Oregon*. Trawling was accomplished along the 40-fathom curve east of the Mississippi delta.

The report noted test fishing in rough seas yielded clean catches of four to eight inch bumpers of three to five thousand pounds per hour tow, using a 65-ft. mid-water trawl. During the first half of the 28-day cruise, underwater observations and motion pictures were made of 40- to 65-foot-square mid-water trawls. Poor horizontal spread of the nets was noted.

Centralized Fish Boat Controls

(*Continued from page 9*)

In aircraft, control is concentrated in the pilot's cockpit. All the information sources cannot be studied at once, nor do they need to be, but their group, logically placed with preference given to the most vital, is an excellent example of centralized control and information services.

Similarly, in boats, the grouping is basically universal: A centrally placed steering position, engine control in certain classes of trawler, with winch and other controls conveniently positioned, together with radar and echo-sounding or fish-finding displays.

However, the common information service and functional control arrangement is wasteful of space and all units cannot be said to be conveniently placed to meet all situations.

There are several basic requirements for centralized control. Hydraulic and electro-hydraulic steering engines are still the most suitable for large fishing vessels. In the interests of safety at least, one magnetic compass must be carried in all types of vessels.

The electric gyroscopic north-seeking compass has been generally adopted in ocean-going vessels for automatic steering. Its advantages are accuracy in polar latitudes, reliability, and absence of errors due to variation and deciation. Compass information can be provided anywhere in the vessel by means of electric repeaters.

Most automatic steering systems using a gyroscopic compass as datum also have electric hand steering which requires less manual effort to steer, while the course is more accurate and fuel and time are saved. Hitherto, the conventional wheel has been almost universally used to actuate the rudder. With electric control, a complete wheel is unnecessary and can even be omitted entirely.

Magnetic compass automatic steering, although not quite as accurate as the gyroscopic system, is efficient, and by comparison, inexpensive. In general, it is more suitable for the smaller vessels. Remote repeaters of transmitting compasses can give inputs to the radio direction finding indicator. With gyro input it is of evident advantage to read off true bearings.

In the latest development of radar, the gyro input has made it possible for the radar console to provide azimuth stabilized true motion display; off-centered relative motion display; true motion display using log speed input, and true motion display using manual speed input. In effect, the officer in charge can be given a picture showing the positions, movements and tracks of all ships within range in true perspective to his own ship.

Many types of electric rudder angle indicators are available. With direct-acting electric steering, control can readily be incorporated with rudder angle indicator. The most modern logs transmit information electrically, and, can supply one of the automatic inputs to "true motion" radar. Distance travelled can also be displayed.

Many types of echo sounders are now available to meet two basic requirements—navigation and fish location. For accurate and speedy detection, and identification of fish, a combination of recorder and visual display, similar to the conventional radar presentation, represents a considerable advance. The recorder will give an indication of the presence of fish and a certain measure of quantitative information. For detailed examination the cathode-ray tube enables extremely accurate and rapid assessment to be made. An aural system can give notice that fish echoes have been detected.

Main Propulsion Machinery Control

Where the main propulsion machinery is internal combustion or electrical and also where controllable pitch propellers are used, complete remote control can be exercised from the wheelhouse as well as from the engine room. A single lever can select both engine rpm., and propeller pitch, with provision to stop the engines, and also discontinue the automatic speed control to obtain full-engine revolutions when necessary. A second lever alters the relationship between pitch and power.

Further advances enables complete control to be exercised from a single lever. This regulates fuel supply and shaft speed, and at the same time controls pitch to meet any change in ship condition. Such systems can also provide a second or "slave" control position in addition to that from the engine room. Propeller pitch and engine revolution indicators are ancillary to main engine controls and are positioned at the control position. The conventional engine room telegraph has been developed into indicating telegraphs and control levers which can be desk-mounted in just a position with other controls.

For stern trawling, closed circuit television, to observe operations that would otherwise not be visible, may be considered. Provision can be made for its incorporation in any scheme of centralized control.

Most proposals of centralized control have the common feature of leaving much of the port side clear of obstructions. Larger ocean-going vessels have a trend towards combining the chartroom and wheelhouse. By careful attention to lighting and screening, the port side of the wheelhouse could be used as a chart table and for the automatic navigator, electric course recorder, weather map display or other instruments concerned in navigation. Where the size of the wheelhouse does not permit this, the space can still be used for a chart table.

Other instruments, particularly internal and radio telephones, could very easily be incorporated in the control consoles. Such units, as loud-speakers and switch boards could be sited conveniently on the after bulkhead.

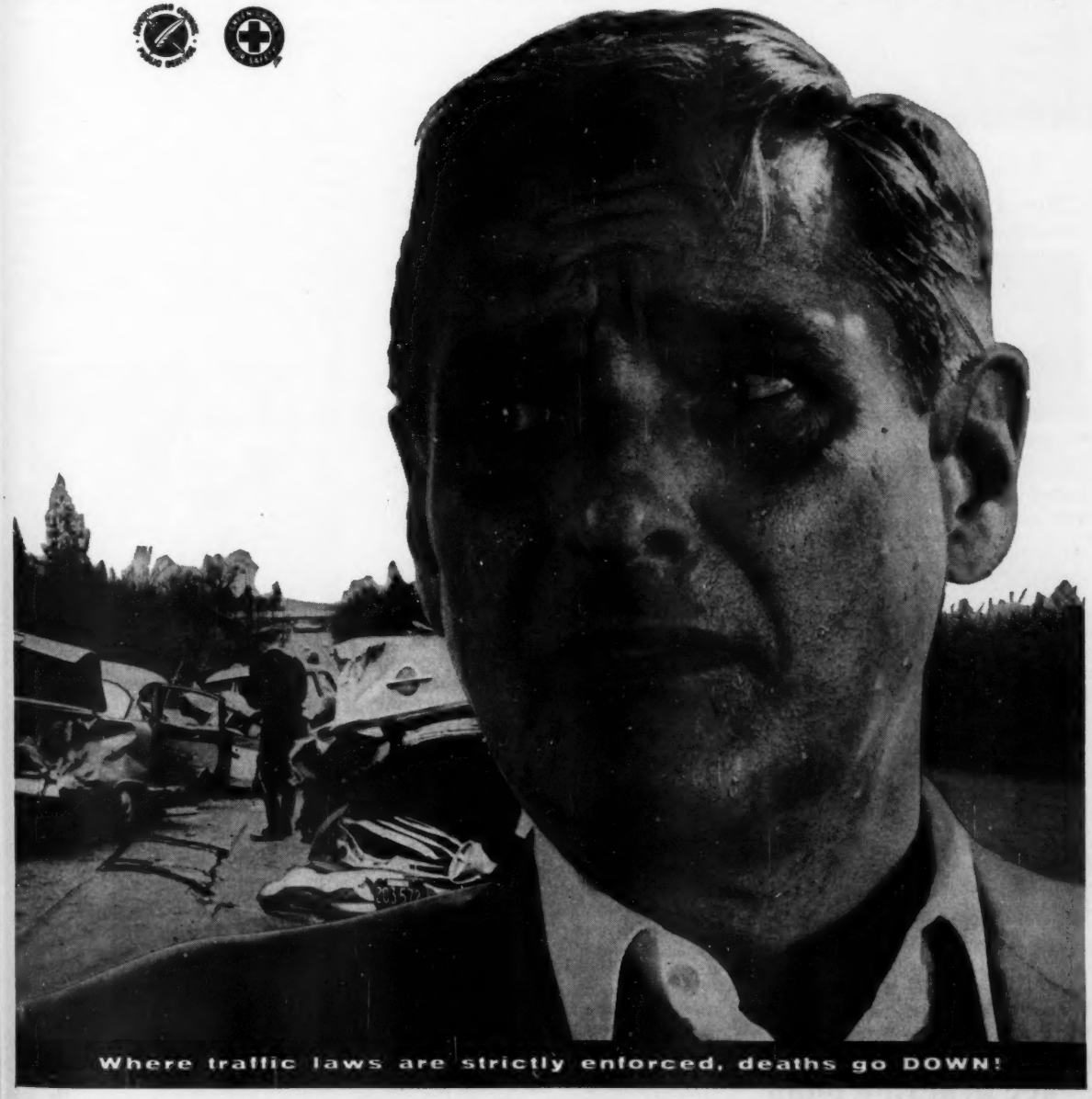
The design of centralized control must be flexible and adaptable to meet individual requirements. Easy access to the various instruments is required for servicing and can be achieved by removable panels or components.

A degree of centralized control can also be achieved, with resultant saving, in small fishing vessels. For instance, the systems using a magnetic compass as datum and providing automatic, hand electric and remote control of steering as an addition to the normal system, are considered particularly useful in drifters, seiners and line fishing boats.

An early decision by the owner to take advantage of centralized control would enable the naval architect to prepare the most economical wheelhouse design leading to a change in the size and shape of the bridge and a saving in weight and cost. Installation problems would be modified and streamlined. An economy in manpower would be achieved with reduction in fatigue and increase in operating efficiency.

"I wish I could have done something to help . . ."

You can do something about traffic accidents! Drive safely yourself—obey the law. Sure. But you can do a lot *more!* Traffic accidents affect *everybody.* Reducing them is a community problem. Its solution calls for systematic, organized effort and cooperation with public officials—for teamwork and leadership. Here is where *you* can help. Join with others who are working actively to promote safe driving and secure strict enforcement of all traffic laws. Make your influence count. *Support your local Safety Council!*



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GREAT LAKES

Lamprey Program Discussed By Fishery Commission

The Great Lakes Fishery Commission met in Niagara Falls, December 3 and 4. Dr. A. L. Pritchard, chairman of the Commission, said that 38 Lake Superior streams had been treated against lamprey during the past year with only one failure notwithstanding serious difficulties. Fourteen streams remain to be treated on Lake Superior. These can be covered by mid-summer of 1960 if conditions during the spring would permit an early start.

Pritchard explained that the chemical treatments had proceeded on schedule during the spring and early summer. The chemical became less effective in July and August as expected. The higher concentration required to kill lamprey during this period was dangerous to fish and treatments were discontinued on all but a few small streams. The chemical did not regain its effectiveness as early in the Fall as anticipated. Full-scale operations, therefore, were not resumed until October. Record rainfall in the Lake Superior area during that month made treatment of a number of large streams inadvisable because of the excessive amounts of chemical required.

The Commission heard reports of the continued decline of the commercial catch of lake trout in Lake Superior which is the last of the Great Lakes to have any significant number of trout. The yield of lake trout in this past year is expected to be about 25 percent of the annual catch before the sea lamprey invaded the lake.

The kill of adult lamprey this year at electrical barriers on their spawning streams in Lake Superior was down about 20 percent from 1958. This is the first decrease noted since barrier operations began in 1953. Some barriers will continue to be operated to measure any reduction of sea lamprey as a result of control measures.

Good Hauls of Whitefish And Chub Taken on Lakes

During poor fishing weather commercial netters operating in Wisconsin and Michigan waters of Lake Superior following recent re-opening of whitefish season were getting substantial yields of whitefish. There was a good annual harvest of herring with the peak during the closing days of November. Commercial quantities of herring were taken in December.

In the Green Bay area, where heavy snows and ice slowed fishing activity, good chub catches were reportedly taken in many instances. Heavy yields of chub were taken from Lake Michigan by tugs out of Wisconsin ports.

Along the eastern shore of Lake Michigan, fishing tugs out of Muskegon, Ludington, Frankfort, etc., were reportedly getting good commercial quantities of chub. Small, established operators who fish mostly for rough fish were landing substantial catches of both chub and small perch in the southern part of the lake. In the Strait of Mackinac area, herring yields have tapered down after many reportedly heavy hauls during November and early December.

On Lake Huron chub yields were good in Saginaw Bay. Heavy commercial fishing activity was functioning on Western waters of Lake Erie during early December. Bad weather rendered fishing difficult, and catches of yellow perch were moderate in production. There were a lot of sheepshead, carp and many small smelt showing. Ohio commercial fishermen were reportedly making good landings of perch, sheepshead, carp, bullheads, etc. in trap nets. Erie, Pa. and New York state commercial producers generally were getting light yields with the major specie being perch.

Lake Michigan Trash Fishing

The Miller Fisheries Co., Milwaukee, has converted its equipment in an operation aimed at utilizing the tremendous poundage of "trash" fish in Lake Michigan. These fish, usually ignored by commercial fishermen, have built up an enormous population in the lake. Jim Miller, head of Miller Fisheries, said that one school of alewife spotted with a depth recorder was found to be about 30 miles long, several miles wide and at least 30 feet deep.

"Before we decided to go into this operation, I made a careful survey of sales possibilities," Miller said. "I found that about 80 percent of the animal (feed) industries were buying their fish from distant points and I could see that if we found a way to take these fish on a competitive basis it would enable us to put some of our units back in operation.

"It is also hoped that by removing the industrial fish, and thereby bringing about a better fish balance, it may pave the way for return of the lake trout. It looks like we are on the way, but if we are to do the job right it will mean more outfits. This is one line of our business that invites competition."

South American Shrimp Grounds

(*Continued from page 7*)

period of worst weather extends from January through March, when the fresh to strong northeast trade winds are said to blow continuously.

Bottom types varied from area to area, but generally conformed to soft mud inside of 20 to 25 fathoms; sand, mud, and broken shell out to 50 or 60 fathoms; and rock, coral, gravel and sand extending from there to the limits of the continental shelf. Occasional patches of hard bottom were encountered in the more desirable shrimp ranges (inside of 50 fathoms), but the entire range was, for the most part, trawlable.

Shore facilities for taking on ice and fuel, and for freezing and storing the shrimp catches are, at present, not sufficient to withstand the sudden influx of a large fleet. Surinam, British Guiana, and Trinidad are presently increasing their capacities in this direction, and all three, in addition to Cayenne, French Guiana, would make suitable bases for shrimp operations if future developments substantiate the indications of a potentially large, year-round fishery.

Fishing Results

The South American pink shrimp which is very closely related to the pink shrimp of the southern United States, represented the largest commercial potential observed during the two cruises. The species was found over a broad area extending from Venezuela, along the Guianas, to the Brazilian coast north of the Amazon River, in waters ranging in depth from 16 to 50 fathoms. While apparently not present in the dense concentrations which marked the early Campeche shrimp fishery, the pink shrimp nevertheless, seemingly, could provide the basis for a steady year-round fishery .

The best *Oregon* catch rates were obtained in close proximity to major drainage systems of the coast; the Orinoco, Essequibo, Corentyn, Surinam and Maroni River systems. The areas off the Oyapok and Amazon Rivers were not sufficiently explored to determine their importance. Catch rates in areas extending out from these drainages averaged two to four times as large as in the intermediate areas.

The best fishing was found as the 30-fathom curve was approached, and shrimp catches dropped sharply on either side of this depth. Almost all catches were composed of medium to large (21-25 to 6-10 count) shrimp. A general tendency toward increase in size of individual shrimp with increasing depth was noted. From 16 to 25 fathoms, catches of less than 10 pounds of 21-25 and 16-20 count shrimp per hour were usual; whereas in the depths between 25 and 35 fathoms, the average for all exploratory drags rose to over 20 pounds per hour of mostly 16-20 count shrimp. In the latter depth range, in three areas—off the Essequibo, Surinam, and Maroni Rivers—nightly catch rates using two 40-foot trawls usually amounted to about 500 pounds of heads-on shrimp (16-20 count). The best night-long catch was off the Surinam River when 576 pounds (heads-on) of 6-10-count pink shrimp were landed. In 45 to 50 fathoms only small numbers of large (6-10 count) female shrimp were caught.

In general the pink shrimp grounds, from the Orinoco to the Oyapok Rivers, afforded good trawling bottom consisting chiefly of a mixture of mud and sand. Small patches of coral and sponge were occasionally encountered, but gear damage was slight, as those areas were easily detected on the depth recorders. The bottom in most areas changed character in waters deeper than 50 fathoms and became considerably rougher; however, pink shrimp were apparently absent, or only infrequently met with, in the deeper area. Inside 10 to 15

fathoms, the great quantity of industrial fish interfered with shrimping operations. The best trawling grounds, thus, correspond well with the highest observed pink-shrimp concentration. The shrimp grounds extend quite far from the coastline. The position of the 20-fathom curve lies from 20 to 35 miles offshore, in most cases.

As in the Gulf of Mexico, pink shrimp catches fell off at, or before, daylight; and daytime trawling was unproductive for this species. Major attention was, therefore, focused on fishing from late afternoon to dawn.

While it is probable that the pink shrimp grounds have been roughly delimited by these cruises, considerable additional work would be necessary to accurately define the boundaries of the most productive fishing areas.

Sporadic catches of brown shrimp were made at widely scattered points along the Northeastern South American coast. Brown shrimp were included in *Oregon* drags over a total depth range extending from 10 to 50 fathoms, although beyond 40 fathoms the quantity caught was considerably less. In the 25- to 30-fathom range they were frequently taken along with pink shrimp. In contrast to the catch rates for brown shrimp in United States waters, the catch rates for brown shrimp along the South American coast did not show any marked fluctuation between day and night catches. They were found predominantly on muddy bottoms. Best catches amounted to 30 to 45 pounds per hour (heads-on) with a 40-foot flat trawl off the coast of British Guiana. The largest night-long catch of brown shrimp was made in 29 to 30 fathoms off the Essequibo River when about 325 pounds (heads-on) were caught mixed with about 175 pounds (heads-on) of pink shrimp. In size, the brown shrimp ranged from 56-60 to 16-20 count, averaging about 26-30 count.

Very little exploration in less than 10 fathoms was made by the *Oregon* due to time limitations and the earlier indications of offshore concentrations of brown and pink shrimp. The prevalence of large quantities of "trash", including a high percentage of such undesirable elements as jellyfish, sting rays and saw fish, might cause a sea-bob trawl fishery to meet with serious drawbacks. A few other shallow-water shrimp species are present in the region and are utilized to some extent as a source of dried shrimp. These, however, are even smaller than the sea bob, varying in size from 100 to 500 (heads-on) shrimp to the pound.

Inshore and offshore shrimp are more or less sharply separated by a band lying between 50-60 fathoms and 85-100 fathoms, in which few shrimp of any commercial, or potentially-commercial, importance have been found. Among the numerous species of shrimp inhabiting the deeper waters, three stand out as possible commercial resources: including a large scarlet shrimp; and the royal-red shrimp.

The first was found over a range of from 95 to 160 fathoms. Only subcommercial catches were found during the present explorations with best catches running from 6 to 10 pounds (heads-on) per one-hour drag. The area of greatest concentration, as found by these limited explorations, was off the Surinam coast within the depth range mentioned. These shrimp averaged around 55-60 count.

Few royal-red shrimp were taken, although the stations made in the royal-red shrimp depth range (roughly 185-350 fathoms) pointed to the existence of that species along the entire coast. The best catch occurred north of Trinidad in 185 to 200 fathoms. A total of 75 pounds (heads-on) of large 16-20 count royal-red shrimp was taken in a one-hour drag with a 40-foot shrimp trawl on a blue-mud bottom in that area.

The large deep-water scarlet shrimp, were taken in small amounts over a total depth range extending from 185 to 400 fathoms. Best catches were made in the 300- to 400-fathom range where catch rates ranged from 10 to 25 pounds (heads-on). This species is an active swimmer and it is likely that the standard flat trawl with its relatively low vertical opening is not suited to cope with a species displaying this ability.

BOAT CATCHES

For Month of December

Hailing fares. Figure after name indicates number of trips.

BOSTON (Mass.)

Agatha (3)	95,800	M. C. Ballard (2)	70,900
Agatha & Patricia (2)	84,300	Medan (2)	110,500
Arlington (2)	193,000	Michigan (2)	151,700
		Minnie (2)	169,500
Baby Rose (2)	88,100	Mother Francis (2)	65,400
Blue Waters (1)	43,400		
Bonaventure (2)	80,000	Nautilus (2)	75,000
Bonnie (2)	147,000	New Star (2)	135,100
Buzz & Billy (3)	79,700	Notre Dame (2)	24,700
Cambridge(2)	152,200	Ohio (2)	92,200
Carcara (2)	86,000	Olympia La Rosa (3)	102,500
Carmen & Vince (4)	134,400		
Charlotte M. (2)	73,000	Pam Ann (3)	134,900
Clipper (3)	98,900	Patty Jean (2)	130,500
Columbia (2)	56,800	Phantom (2)	133,100
Comet (2)	89,700	Philip & Grace (1)	45,500
C. R. & M. (1)	13,600	Pilgrim (3)	116,700
		Plymouth (3)	138,600
Dolphin (2)	57,200	Puritan (2)	85,000
Eagle (1)	28,200	Racer (2)	204,700
Emily H. Brown (2)	59,700	Red Jacket (3)	280,000
Ethelena (3)	90,000	Rosa B. (2)	111,000
		Rosie (2)	9,100
Flying Cloud (2)	162,500		
Four (3)	157,000	St. Angelo (1)	24,900
		St. Joseph (1)	30,200
Grace & Salvatore (2)	95,000	St. Marco (2)	65,100
		St. Nicholas (1)	43,700
Hazel B. (2)	84,000	St. Victoria (2)	90,000
Heroic (2)	127,900	Star of the Sea (2)	43,900
Holy Family (2)	107,300	Swallow (2)	139,600
J. B. Junior (2)	125,100	Terra Nova (3)	154,200
Jeanne D'Arc (3)	108,400	Texas (2)	64,300
Joan & Tom (1)	20,400	Thomas D. (3)	73,400
Joseph & Lucia (1)	49,000	Thomas Whalen (2)	94,700
Josephine P. II (2)	26,700		
		Villanova (4)	97,400
Leonard & Nancy (3)	83,700		
		Weymouth (2)	133,100
Magellan (3)	85,700	Wild Duck (1)	49,600
Manuel F. Roderick (1)	40,300	Wm. J. O'Brien (2)	136,200
Mary & Joan (1)	39,000	Winchester (2)	148,200
Mary Rose (2)	80,200	Wisconsin (1)	106,000

GLOUCESTER (Mass.)

Acme (3)	15,000	Little Flower (5)	29,000
American Eagle (4)	42,000		
Anna Guarino (1)	1,500	Magnolia (1)	175,000
Annie (1)	2,000	Margaret Marie (1)	1,000
		Marianna II (4)	35,000
Blue Waters (1)	20,000	Mary Ann (3)	29,000
		Morning Star (6)	27,500
Cape Cod (1)	3,000		
Carlo & Vince (2)	5,500	Nancy & Maria (1)	1,000
Cigar Joe (6)	63,000	Natale III (10)	54,500
Curlew (2)	294,000		
		Ocean Wave (1)	2,000
Dawn (1)	1,000		
Dolphin (1)	7,000	Prosperity (1)	500
Doris F. Amero (1)	3,000		
		Regina Maria (1)	12,000
Eagle (2)	70,000	Rhode Island (4)	44,000
Emily H. Brown (1)	120,000	Rosalie S. (1)	4,000
Estrela (1)	320,000	Rose & Lucy (8)	22,000
Eva II (1)	2,000	Rosemarie (3)	38,500
Evelyn L. Brown (2)	400,000	Rosie & Gracie (5)	21,500
Falcon (1)	7,000	St. Anna Maria (4)	12,500
Flow (1)	150,000	St. Cabrini (4)	38,000
Frances R. (4)	15,000	St. John II (1)	1,000
		St. Joseph (5)	33,000
Gaetano S. (2)	37,000	St. Mary (6)	38,000
Giacoma (1)	500	St. Nicholas (1)	78,000
Gloucester (2)	295,000	St. Peter (7)	35,500
Golden Dawn (3)	43,000	St. Peter III (2)	36,500
Grace & Salvatore (1)	8,000	St. Providenza (1)	1,000
		St. Rosalie (2)	4,000
Holy Family (1)	35,000	St. Stephen (1)	1,000
Holy Name (4)	49,500	St. Terese (6)	38,500
		Salvatore & Grace (3)	17,500
Ida & Joseph (5)	39,500	Sandra & Jean (5)	37,500
Immaculate Conception (3)	39,500	Santa Lucia (1)	2,000
		Sebastiana C. (4)	25,000
Jackie B. (3)	28,000	Serafina N. (3)	19,000
J.B.N. (4)	5,000	Serafina II (6)	31,500
Jennie & Lucia (3)	19,000	Sunlight (2)	53,000
Joseph & Lucia (1)	69,000		
Judith Lee Rose (1)	180,000	Theresa M Boudreau (1)	180,000
		Tipsy Parson (1)	1,000
Kingfisher (1)	210,000		
		Villanova (1)	220,000
Lady of the Rosary (5)	70,500	Vincie N. (4)	46,000
Linda B. (1)	1,500	Virginia Ann (2)	7,000

NEW BEDFORD (Mass.)

Adventurer (2)	27,200	Mary & Gloria (1)	6,000
Althea (3)	47,500	Mary E. D'Eon (2)	22,000
Anastasia E. (3)	27,500	Mary J. Landry (3)	38,300
Annie Louise (3)	19,500	Mary Tapper (3)	47,000
Annie M. Jackson (3)	36,000	Midway (2)	67,300
		Miriam A. (3)	33,200
Barbara M. (4)	77,000	Molly & Jane (3)	41,000
Bonnie Bill (1)	8,000	Monte Carlo (1)	21,500
Brant (2)	15,600		
		Nancy L. (3)	26,700
Cap'n Bill II (3)	72,600	Nautilus (1)	24,800
Capt. Deebold (2)	33,500	North Sea (3)	39,200
Carl Henry (2)	43,000		
Catherine & Mary (4)	56,200	Olive M. Williams (1)	19,000
Charles E. Beckman (2)	22,700		
Christina J. (2)	38,000	Pauline H. (2)	91,800
Comber (3)	22,300	Phyllis J. (1)	7,500
Connie F. (3)	27,100	Porpoise (3)	43,600
		Richard Lance (1)	12,500
Eugene H. (3)	28,800	Rita (1)	8,600
		Roann (2)	30,700
Falcon (3)	58,200	Robert Joseph (3)	61,500
Friendship (2)	45,000	Roberta Anne (2)	40,500
		Rush (3)	49,000
Gannet (2)	68,000	Ruth M. (1)	9,700
Glen & Maria (3)	25,900		
Growler (3)	33,000	Sea Gold (2)	27,800
		Sea Ranger (2)	27,600
Harmony (2)	24,400	Shannon (3)	43,000
Hope II (4)	48,500	Sharon Louise (3)	58,200
		Skip Jack (2)	47,500
Invader (2)	59,000	Smilyn (3)	39,000
Ivanhoe (2)	36,700	Solveig J. (2)	62,500
		Stephen R. (1)	16,000
Janet & Jean (2)	38,400	Sunbeam (3)	36,100
Joan & Ursula (2)	42,200	Susie O. Carver (3)	28,000
John G. Murley (2)	65,500		
Julia DaCruz (1)	12,300	Teresa & Jean (2)	53,700
		Two Brothers (2)	16,300
Katie D. (2)	55,500		
Libby (3)	40,100	Valiant Lady (3)	37,200
Lorine III (2)	27,000	Venture I (2)	43,500
Louis A. Thebaud (3)	57,000	Viking (2)	58,500
Major J. Casey (3)	35,000	Whaler (2)	62,100
Martha E. Muriey (2)	27,000		
Marie & Katherine (2)	26,600		

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Aloha (2)	22,700	Lauren Fay (2)	26,400
Alpar (1)	11,000	Lillian B. (2)	23,400
Amelia (2)	22,400	Linus S. Eldridge (3)	29,700
		Louise (1)	13,000
Babe Sears (1)	8,300	Lubenray (1)	10,500
Baltic (2)	26,700		
Barbara & Gail (2)	22,400	Malene & Marie (2)	25,200
Bright Star (2)	26,700	Mary Ann (2)	22,700
		Mary J. Hayes (2)	25,700
Camden (2)	26,200	Moonlight (1)	10,800
Catherine B. (2)	23,700		
Catherine C. (2)	29,500	Nancy Jane (2)	24,200
Charles S. Ashley (2)	26,800	Neptune (2)	23,400
Clipper (2)	30,200	New Bedford (2)	26,000
		Noreen (1)	11,200
Dartmouth (2)	31,200		
Debbie Jo-Ann (2)	26,200	Pelican (1)	16,000
		Polaris (2)	23,200
Edgartown (2)	29,400		
Elizabeth N. (2)	26,700	Richard Lance (2)	15,500
		Ruth Lea (2)	25,200
Fairhaven (2)	27,800	Ruth Moses (2)	28,200
Flamingo (2)	24,500		
Fleetwing (1)	17,500	Sandra Jane (2)	35,200
Florence & Lee (2)	25,200	Sippican (2)	30,000
Florence B. (2)	23,400	Snoopy (2)	23,500
		Stanley B. Butler (2)	27,200
Geraldine (2)	29,000	Stanley M. Fisher (1)	11,800
Hilda Garston (1)	16,000	Toscin (2)	22,700
Ike & Jens (2)	31,700	Ursula M. Norton (2)	27,200
John Michael X (2)	22,400	Villa-Riall (3)	29,600
Josephine & Mary (2)	26,200	Vivian Fay (3)	27,400
		Wamsutta (2)	25,200
Kingfisher (1)	11,200	Whaling City (2)	22,200
Laura A. (1)	12,500		

WOODS HOLE (Mass.)

Agnes & Myrnie (1)	6,400	Marie & Katharine (1)	5,800
Arnold (2)	8,600	Mary E. D'Eon (1)	7,100
Cap'n Bill III (3)	39,300	Minkette (3)	8,200
Comber (1)	3,200	Papoose (2)	9,300
Curlew (4)	17,100	Phyllis J. (1)	2,300
Gertrude D. (3)	18,100	Southern Cross (1)	6,700
Jenny M. (1)	3,600	Three Bells (2)	12,600
Madeline (2)	5,800		

ROCKLAND (Me.)

Araho (1)	19,500	Ocean (2)	510,000
Brighton (2)	242,000	Squall (1)	200,000
Elin B. (3)	92,000	Storm (1)	220,000
Flo (2)	36,500	Surf (2)	530,000
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John J. Nagle (3)	119,000	Wave (1)	235,000
Little Growler (3)	60,500		

Scallop Landings (Lbs.)

		Pocahontas (2)	22,000

PORTLAND (Me.)

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Andarte (4)	99,800	Quincy (2)	101,000
Ariel (1)	500	St. George (1)	160,000
Bois Bubert (2)	800	Theresa R. (2)	108,000
Dorchester (1)	65,000	Vagabond (2)	28,000
Dorothy & Ethel (3)	11,000	Vandal (3)	111,000
Elinor & Jean (3)	40,500	Wawenock (2)	320,000
Gulf Stream (3)	146,000	Winthrop (3)	166,000

Scallop Landings (Lbs.)

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NEW YORK

Andrea G. (3)	64,900	Golden Eagle (2)	65,000
Austin W. (2)	39,800	Joseph S. Mattos (3)	74,000
Carol-Jack (1)	31,000	Lady of Good Voyage (3)	66,400
Dorothy Mary (1)	9,200	Manuel P. Domingoes (2)	70,000
Edith L. Boudreau (2)	38,300	Santa Maria (3)	109,000
Evelina M. Goulart (3)	46,000	Tina B. (2)	64,600

Scallop Landings (Lbs.)

Beatrice & Ida (1)	10,000	Hilda Garston (1)	11,000
Carol-Jack (1)	10,000	Karina T. (1)	10,000
David A. (1)	11,000	Muskegon (2)	19,000
Enterprise (2)	22,000	Norseman (2)	15,000
Felicia (2)	22,000	Three Bells (2)	12,600

Washington Oyster Mortality Rate

(*Continued from page 8*)

peratures at Oyster Bay makes oysters there grow faster. From approximately two to three weeks mortalities were considered to have resulted from damage during culling and were not considered. It is possible, however, that the initial mortalities at all stations were due to delayed effects of culling. The mortality for all experimental oysters in the study was 1.716 percent. If mortalities were to continue at the same rate during the remainder of the year, there would be an annual mortality of approximately 6 percent. No significant difference was found between the mortalities of experimental and control oysters. The weekly handling of oysters in the experimental trays did not increase mortality.

As another indicator of growth, water displacement and gallon bucket samples of oysters were obtained during the weekly station checks. At the beginning of the study, Hood Canal had the highest displacement of all, followed by Willapa Bay and Oyster Bay. During the first week of July, Oyster Bay's experimental oysters had the highest displacement, followed by Willapa Bay and Hood Canal. The water displacements of control oysters during the first week in July were definitely higher than the experimental oysters at the same time. The control oysters at Oyster Bay were again the highest, followed by Hood Canal and Willapa Bay.

The number of experimental oysters required to fill a gallon bucket was lowest at Oyster Bay, followed by Hood Canal and Willapa Bay. Thus, Oyster Bay had the largest experimental oysters during the first weeks of July as demonstrated by the volume measurement as well as displacement. The control oysters for Oyster Bay, Willapa Bay, and Hood Canal were less, once again revealing that the greatest growth occurred at Oyster Bay.

Virtually no mortalities occurred at any of the stations after the effects of culling mortality had ended until May. During May and June sporadically but consistently small numbers of oysters died. Willapa Bay had the fewest deaths, Oyster Bay was second and Hood Canal had the most. Oyster deaths in the first part of the experiment could have been due to culling, Sparks said.

The university research project, planned originally to compare three Washington oyster areas may also demonstrate the commercial value of using floats in Pacific Northwest oyster culture. Almost all oysters in Japan are grown on floats, while Washington oystermen prefer beds behind specially-constructed dikes.

Sparks' work may have other far-reaching effects on Washington's oyster industry, which has produced almost 10,000,000 pounds of oysters annually. It could result in a shifting of oyster areas within the state, as well as establishing a new method of cultivation. The study will be financed another year by a renewed grant.

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FOREIGN BAILINGS

INCREASED EMPHASIS is to be placed on development and demonstration of vessels and gear to increase the efficiency of Canada's Atlantic coast fishing fleet. Recommendations have been made for the design of new inshore and offshore vessels incorporating studies into the relative costs and efficiency of various types of metal and wooden hulls.

The powering of boats will also receive close attention with particular reference to the trend on the part of fishermen to increase the power of their boats, as will the continuation of the economic studies by the federal Department of Fisheries on the operation of modern longliners and draggers and possible expansion to include new multi-purpose vessels and deepsea trawlers.

THE UNIVERSITY OF CHILE will shortly take over a modern marine and fishery research vessel. The duties of the new ship will include detection of new fishing grounds and experiments to establish the most efficient methods of exploiting the great abundance of fish in Chilean waters.

The ship will be at sea for 270 days of the year. There are two laboratories on board and cabins for four researchers besides accommodation for a crew of eight. One of the two holds is appropriated for gear used in marine research and experimental fishing, while the other hold is arranged with refrigeration and thermal insulation for a cargo of 15 tons of fish.

The vessel will be powered with a 4-cylinder B&W Alpha Diesel engine, type 340-V developing 220 hp. at 450 rpm., provided with controllable pitch propeller. The cruising speed will be 9 knots, and the vessel's radius of action, 2,000 miles.

BRITISH HEALTH AUTHORITIES are permitting the sale of oysters harvested from suspected contaminated areas, provided the shellfish are cleansed in tanks in accordance with the Ministry of Agriculture and Fisheries Laboratory's recommendations.

Oysters are brought into an enclosure in baskets and on to a clean concrete surface. There they are washed to remove mud, and are placed in wood framed trays with wire netting at the bottom.

The trays are placed in sea water filled treatment tanks. The water is circulated by pumps, and drawn from the bottom of the tanks through pipes into overhead tanks. The water then passes at a very shallow depth over a weir and under ultraviolet lamps.

Then it is dropped some 3 or 4 feet and is aerated in the process. After 48 hours in the treatment tanks, the oysters are completely cleansed.

A NEW ELECTRON HARPOON, which is a modified version of one originally developed by a West German fisheries scientist, was demonstrated aboard the Canadian swordfish vessel *Terry and Gail* off the Nova Scotia coast in the summer of 1959.

In 11 hours of fishing 13 swordfish were sighted, 13 were killed, and 11 were landed. The two escapes were said to be the result of a faulty barb.

The harpoon uses a 250-volt charge which is carried by cable to the harpoonhead. The shock kills instantly, so that the fish can be landed in a matter of minutes as compared to the average of ½ to 3 hours using the old technique. It is also reported that killing by shock leaves the meat of the fish in better condition than if caught after a wild struggle.

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Dragger *Aerolite*. Maine built, 57′ long, 14′7″ side, 6′2″ draft. 100 hp. D-11000 Cat, Hathaway winch, radiotelephone, depth sounder. Write Lands End Marine Supply, 337 Commercial St., Provincetown, Mass. Tel. 784.

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Conrod connecting rod bearings for following engines: 250 hp. ATLAS, 300 hp. ATLAS, 400 hp. ATLAS—$95 per box for any model.

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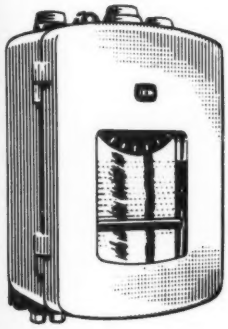
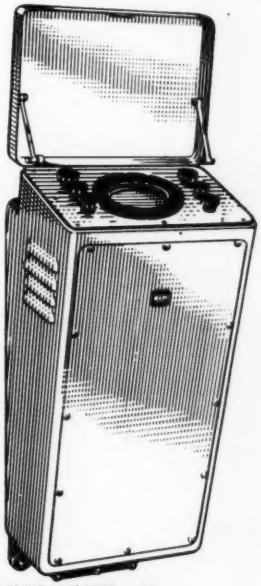
Vertical and Horizontal Sounding—Recording and Viewing Types



Kelvin Hughes echo sounding instruments are designed for one particular purpose—to aid commercial fishermen. They are the result of 20 years' design experience and the most modern engineering facilities. They have set new, unsurpassed standards of performance in positive detection of fish.

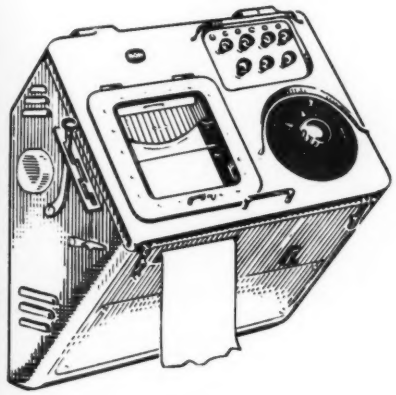


▲ KELVIN HUGHES "WHITE LINE" RECORDER

A new type recording echo sounder which details fish on or near the bottom. The presence of fish shows up clearly, since the white line follows the black sea bed contour line and provides a sharp color contrast. It shows echoes from low-lying fish which sometimes merge with the sea-bed echo in conventional sounding gear. The White Line sounder records fish at all depths.

KELVIN HUGHES VIEWING UNIT ▲

An echo vision instrument (scale expander) for use with the Kingfisher Recorder. A 5" cathode ray tube gives enlarged visual presentation of any selected 5, 10 or 15 fathom layer of water under the vessel. Retractable visor is provided for daylight viewing. Makes it easy to find isolated fish or scattered schools close to the bottom.

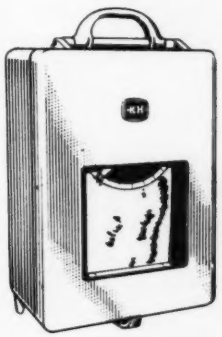


▲ KELVIN HUGHES FISHERMAN'S ASDIC

A completely automatic horizontal echo-sounding/echo-ranging instrument for locating schools of surface and mid-water fish. Available as indicating or recording type. Also can be used in conjunction with White-Line recorder to locate bottom fish, thus providing two-in-one service.

KELVIN HUGHES PORTABLE RECORDER (White Line) ▼

Specially designed for small fishing boats; compact and rugged. The MS30 Recorder is completely water-tight, weighs only 50 lbs., and operates on 12, 24, 32 or 36 volts. It is available in three scale ranges: 160, 80 and 320 fathoms. This machine will effectively asdic 1500 feet from the operator. The linkage is expandable and is hand operated for asdic work. For location of ground fish, the White Line can be turned on.



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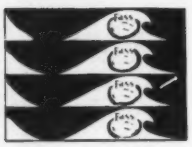

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